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MILITARY STANDARD GENERATORS PROTOTYPE MODIFICATIONS VOLUME III - 60 kW DOD GENERATOR SET

VSE Corporation
2550 Huntington Avenue
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31 March 1988

Final Report For Period Of 17 July 1987 Through 31 March 1988

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Prepared for:

U.S. Army Belvoir Research, Development and Engineering Center
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Fort Belvoir, VA 22060-5606

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This report consists of three volumes:

- Volume I - 15 kW DOD Generator Set.
- Volume II - 30 kW DOD Generator Set.
- Volume III - 60 kW DOD Generator Set.

Government approved modifications to the military standard 60 kW Diesel Engine Driven (DED) Generator Set were made to install a new engine, reduce noise levels and improve reliability. Tests performed to a government approved test plan showed all design changes to be sound in concept. Further reliability testing should be accomplished after deficiencies resulting from testing are corrected.

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SUMMARY

The 60 kW DoD Generator Set was modified for a new engine and for sound attenuation and reliability improvements according to government approved designs. A test program, performed in accordance with a government approved test plan showed the design concepts to be sound in principle. Further testing for reliability should be performed by the user, and all deficiencies occurring during these tests should be corrected.

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PREFACE

This report was prepared under the authority of Task Order 0088 to US Army Belvoir Research, Development and Engineering Center (Belvoir) Contract No. DAAK70-86-D-0023. Contract No. DAAK70-86-D-0023 requires VSE Corporation to provide engineering and technical support for a wide range of projects being performed at Belvoir. Task Order 0088 is concerned with the modification and improvement of 15 kW, 30 kW, and 60 kW Military Standard Diesel Engine Driven (DED) Generator Sets.

Documentation of the task efforts and results is furnished in three volumes:

- Volume I - 15 kW DOD Generator Set.
- Volume II - 30 kW DOD Generator Set.
- Volume III - 60 kW DOD Generator Set.

The authors of this report wish to acknowledge the valuable guidance and contributions provided by Mr. Noel D. Bishop, Mr. Bobby C. Jones, and Ms. Selma J. Nawrocki of Belvoir's Power Distribution Division.

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MILITARY STANDARD GENERATORS PROTOTYPE MODIFICATIONS

VOLUME III - 60 kW DoD GENERATOR SET

1. INTRODUCTION

1.1 Statement Of The Problem. Existing 60 kW DoD Military Standard Diesel Engine Driven (DED) Generator Sets must be modified to reduce sound levels and vibration. These sets must also be improved for reliability and operational features. In addition, a new engine must be provided and fitted as the engines currently being used are no longer in production. Government Furnished Data (GFD) for these modifications and improvements must be evaluated, and receive government approval, for subsequent manufacturing and testing of prototype sets.

1.2 Background. Task Order 0088 to Belvoir Contract No. DAAK70-86-D-0023 is the third in a series of three tasks which are intended to result in modified and improved military generator sets to include the 60 kW DoD Military Standard DED Generator Set. The first task (No. 0067) was a market investigation which deliberately involved industry in the product improvement process in order to ensure that state-of-the-art materials and manufacturing techniques and processes were considered. Suggestions from industry were reviewed and those considered valid, achievable, and cost effective (given program constraints) were forwarded to Belvoir as recommended improvements. The second task (No. 0076) required a more detailed engineering evaluation and analysis of the improvements approved by the Government, which included the sound attenuation design previously used on the Regency Net set. Delivered under this task were Level 1 engineering drawings supported by calculations, and other engineering data for all improvements. The second task also included a requirement to identify a new engine for the 60 kW generator set. The third task, for which this report is written, required work and services on 12 generator sets; two each: 15 kW, 60 Hz; 15 kW, 400 Hz; 30 kW, 60 Hz; 30 kW, 400 Hz; 60 kW, 60 Hz; and 60 kW, 400 Hz.

1.3 Purpose Of Report. The purpose of this report is to detail the modifications to the 60 kW DoD Generator Set, the purpose for which they were made, problems which were encountered during testing, and the solutions which were applied.

1.4 Scope Of Report. The test results and findings presented in this report are limited to the 60 kW, 60 Hz and 400 Hz DED generator set only. The period of this report is 19 July 1987 through 31 March 1988.

1.5 Reference To Related Work. Task Orders 0067 and 0076 under Belvoir Contract No. DAAK70-86-D-0023 provided knowledge and data, used with other GFD, to accomplish the work specified in this task order (0088).

1.6 Disposition Instructions. Destroy this report when no longer needed. Do not return it to the originator.

2. INVESTIGATION

2.1 Technical Requirements. The basic technical requirements for performance of this task order were to: perform an engineering evaluation and analysis of GFD; manufacture, modify, and test prototypes; and, document all work and services. Specifically, VSE Corporation was required to:

- o Review, analyze and evaluate GFD, DOD-D-1000 Level 1 drawings, for a concept developed by Regency Net and BBN Laboratories, Inc. These data pertained to sound attenuation, reduced vibration, and improved reliability and operational features for the 60 kW generator set and companion 15 kW and 30 kW generator sets.

- o Procure, prototype manufacture, and install improved assemblies/ subassemblies (including components) and changes in accordance with government approved recommendations resulting from task orders 0067 and 0076 of this contract, and from the above mentioned evaluation of GFD.

- o Procure and install components to improve the reliability and operational features as specified and as shown in the Statement of Work, "Technical Requirements For Sound Attenuating Modification And Reliability Improvements".

- o Test modified and improved generator sets according to the government approved test plan shown in Appendix A (Basis of This Report).

2.2 Technical Approach. The technical approach used to complete testing of the 60 kW Generator Set was based on two steps:

- o Modification of generator sets including the new engine installation.

- o Post-modification testing to determine if modifications produced desired results.

All testing was accomplished at a subcontractor facility (National Technical Systems, Hartwood, VA).

3. DISCUSSION

3.1 60 kW DoD Generator Set Modifications

3.1.1 Scheduled Modifications. Modifications scheduled for incorporation into the 60 kW Generator Set were:

- o Install new engine, Hercules Model 3400T.

- o Install sound attenuation kits.

- o Install vibration isolation mounts between the engine/ generator assembly and the skid base.

- o Relocate the manual throttle cable.

- o Install pull-out battery rack.
- o Install improved door latches.
- o Relocate engine exhaust outlet.
- o Provide low coolant level protection.
- o Install solar charging kits.
- o Install improved fuel filter/water separators.

3.1.2 Modifications For Sound Attenuation. The sound attenuation kit design used for the 60 kW generator set was based on the concept employed during the modification of the 15 kW, Military Standard generator sets for Regency Net application.

The modification included the installation of vibration isolation mounts between the engine/generator and the skid frame; lining the interior of the enclosure, including the doors with sound attenuation panels; installation of a larger more efficient exhaust muffler; the addition of cooling air inlet, auxiliary air inlet, and discharge silencers. Improved door latches were also scheduled for installation; however, they were not available prior to the conduct of testing. The engine cooling fan/water pump speed was reduced from the standard 2025 RPM to 1800 RPM, 1:0 to 1:0 ratio, by reducing the size of the crankshaft drive pulley. This was done to lower the noise level generated by the cooling fan.

3.2 Reliability Improvements. The installation of the vibration isolation mounts for sound attenuation is expected to improve reliability through the reduction of vibration related failures.

The battery rack modification provided for a slide out tray to facilitate battery maintenance thus reducing battery related failures due to low water level and corrosion.

A low coolant level sensor was installed to prevent severe engine damage in the event of a major coolant leak.

A solar battery charging kit was installed to maintain the set batteries in a charged condition throughout long periods of shut-down.

A fuel filter/water separator equipped with a high water level warning light was installed in an effort to reduce fuel contamination related failures.

At the conclusion of all modifications the 400 Hz set weighed 4920 lbs for a weight increase of 520 lbs over the unmodified set.

When the generator set is trailer mounted the stowage angle of the rear tread plate must be changed to 35 degrees from the vertical to provide clearance. The trailer tow eye weight, with the generator set installed is 400 lbs. The

placards have been modified to reflect all electrical and center of gravity changes which have resulted from the modifications.

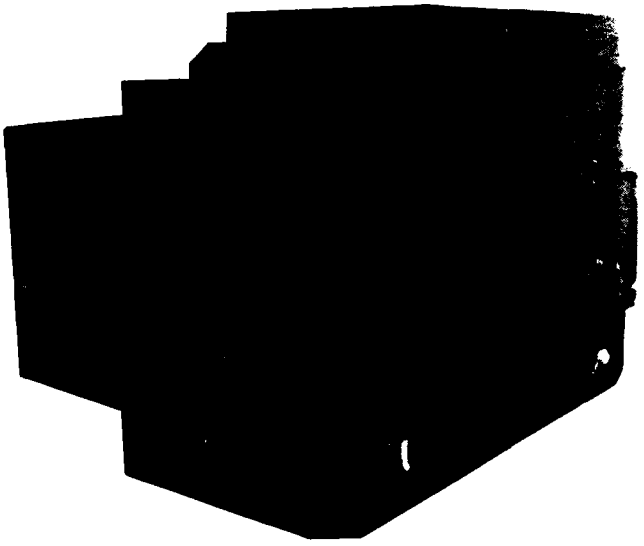
Pictures of the modified sets are presented in Figure 1.

3.3 Testing

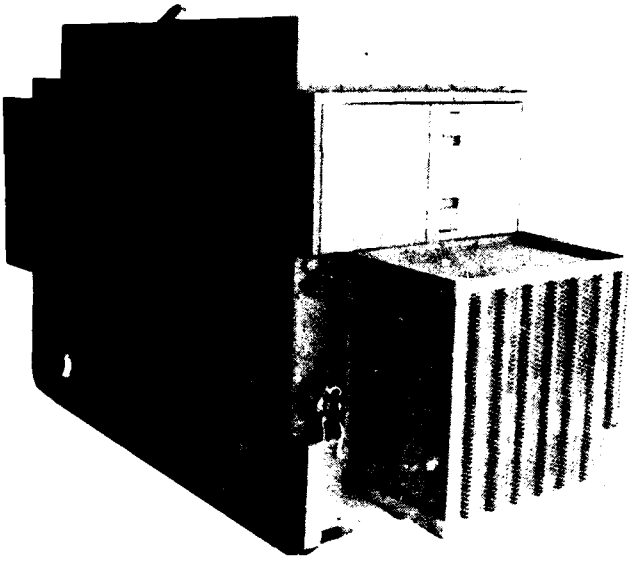
3.3.1 Noise Level Test. The noise level testing was conducted at the conclusion of modification to evaluate the effectiveness of the sound attenuation effort. All noise level testing was conducted in accordance with the appropriate provisions of MIL-STD-1474.

3.3.2 Scheduled Tests. The following series of testing was conducted to evaluate the effects of the modifications on overall performance characteristics. These tests were conducted in accordance with the provisions of MIL-STD-705, Method 710.1, "High Temperature Test".

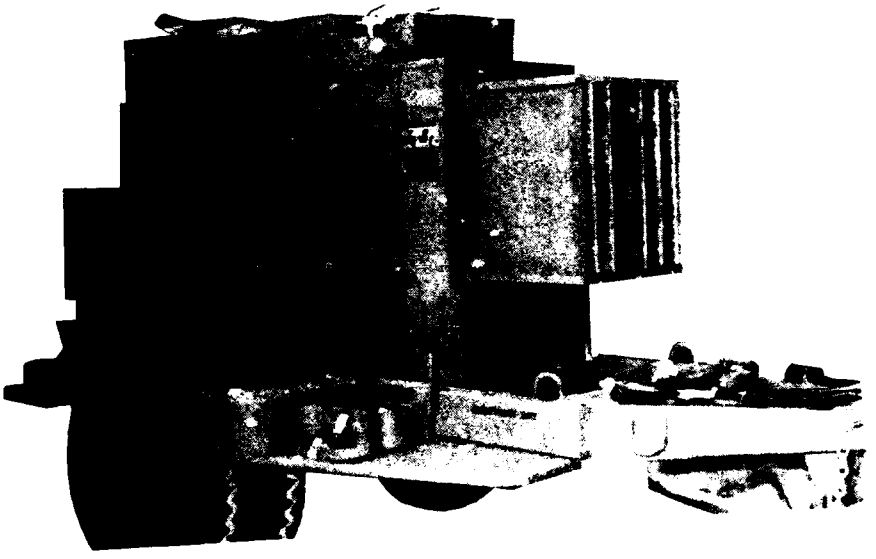
Method 401.1	Winding Resistance Test.
Method 511.1	Regulator Range Test.
Method 511.2	Frequency Adjustment Range Test.
Method 512.1	Circuit Interrupter Test (Short Circuit).
Method 512.2	Circuit Interrupter Test (Overload Circuit).
Method 512.3	Circuit Interrupter Test (Overvoltage Undervoltage).
Method 513.3	Indicating Instrument Test (Electrical).
Method 608.1	Frequency and Voltage Regulation, Stability and Transient Response Test (Short Term).
Method 608.2	Frequency and Voltage Stability Test (Long Term).
Method 619.2	Voltage Dip and Rise for Rated Load Test.
Method 655.1	DC Control Test.
Method 710.1.2.1(h)	(Hot Restart).
Method 515.2	Over Temperature Protective Device Test.
Method 640.1	Maximum Power Test.
Method 504.2	Torsiographic Testing.
Method 701.2	Starting and Operating Test (Moderate Cold) (-25 ^{o}F).



Right Front View.



Right Rear View.



Trailer Mounted View.

Figure 1. 60 kW (Modified) Military Standard Generator Set.

Method 740.3 Drop Test (Ends).

Method 740.5 Railroad Impact.

3.3.3 Test Procedure. At the conclusion of the modification phase, testing was conducted to insure that the performance characteristics of the generator sets were not adversely affected by any of the modifications.

The general procedures used to conduct testing were as described in the Test Plan, Appendix A. With the exception of Noise Level, Low Temperature Starting and Operating, Drop and Railroad Impact all testing was conducted with the generator set placed in an environmental chamber. The chamber ambient temperature was maintained at +125 ^{O}F for all tests unless otherwise indicated with the exception of Maximum Power, Over Temperature Protective Device and the baseline Winding Resistance Test which were conducted at Normal Ambient Conditions. The test program was terminated before the Drop Test, Moderate Cold and Torsiographic tests could be conducted on Set No. 1. Only noise level tests were conducted on Sets No. 2, 3 and 4.

3.3.4 Test Results. For ease of identification, each generator set has been given a reference number. These are:

Set No.	Set Identification
1	60 kW, 60 Hz S/N DZ02785
2	60 kW, 60 Hz S/N DZ02787
3	60 kW, 400 Hz S/N FZ06008
4	60 kW, 400 Hz S/N FZ06050

Test results for Set No. 1 are presented in tabulated form in Figure 2. The tabulations indicate pass or failure findings for each test as well as a brief comment regarding non-compliances. Non-compliances and problems encountered and are discussed in greater detail in paragraph 3.3.5 "Test Comments" of this report. Precise values for all test results are in Appendix B, "Test Data", of this report.

3.3.4.1 Noise Level. Baseline testing was not conducted due to re-enginging. Set No. 1 was initially fitted with an interim engine, installed with adapters to evaluate form, fit and function prior to the receipt of the production engines. Noise level testing was conducted with the interim engine installed. Noise level measurements exceed the design goals at two positions with the highest, 71.9 dBA measured at the fan end of the unit. The test was repeated with the production engine installed, the auxiliary air intake was open and the center panel removed from the cooling air discharge silencer. Noise level measurements exceeded design goals at six of the eight positions with the highest measurement 74.5 dBA occurring at the right side of the fan end of the unit. The relative position and value of all measurements, for the rated load condition, taken at 7 meters and .7 meters are presented in Figure 3.

GENERATOR SET 60 kW, 60 HZ S/N D202785 (SET NO. 1)			
PRE-MODIFICATION BASELINE TESTS			
TEST METHOD AND NAME	PASS	FAIL	COMMENTS
MIL-STD 1474 Sound Level			Test not conducted
(608.1) Freq. and Voltage Regulation Stability and Transient Response			Test not conducted
POST-MODIFICATION TESTS HIGH TEMPERATURE (710.1)			
TEST METHOD AND NAME	PASS	FAIL	COMMENTS
(511.1) Regulator Range	X		None
(511.2) Frequency Adj. Range	X		None
(512.1) Circuit Interrupter (Short Circuit)	X		None
(512.2) Circuit Interrupter (Overload Current)	X		None
(512.3) Circuit Interrupter (Overvoltage/Undervoltage)	X		None
(513.2) Indicating Instrument		X	Ammeter error exceeded maximum allowable
(608.1) Freq. and Voltage Regulation Stability and Transient Response		X	Frequency exceeded maximum allowable undershoot & recovery time
(608.2) Freq. and Voltage Stability (Long Term)		X	Frequency regulation, undershoot & recovery time excessive
(619.3) Voltage Dip and Rise for Rated Load	X		None
(655.1) D.C. Control		X	D.C. Voltage could not be adjusted
(401.1) Winding Resistance	X		No manufacturer's data was available for resistance comparison
(710.1.1.3h) High Temp. Restart	X		None
POST-MODIFICATION TESTS (PREVAILING AMBIENT)			
TEST METHOD AND NAME	PASS	FAIL	COMMENTS
MIL-STD-1474 Sound Level		X	Exceeded maximum allowable levels at 7 meters.
(401.1) Winding Resistance	X		None
(515.2) Overtemperature Protective Device	X		Problems were encountered during testing
(640.1) Maximum Power	X		None
(608.1) Pre-Drop			Test not conducted
(740.3) Drop Test (Ends)			Test not conducted
(608.1) Post Drop			Test not conducted
(740.5) Rail Impact			Test not conducted

Figure 2. Tabulated data - Set No. 1.

GENERATOR SET 60 KW 60 HZ SN DZ02785

Set No. 1

NOISE LEVELS IN dBA

I= INTERIM ENGINE

P PRODUCTION ENGINE

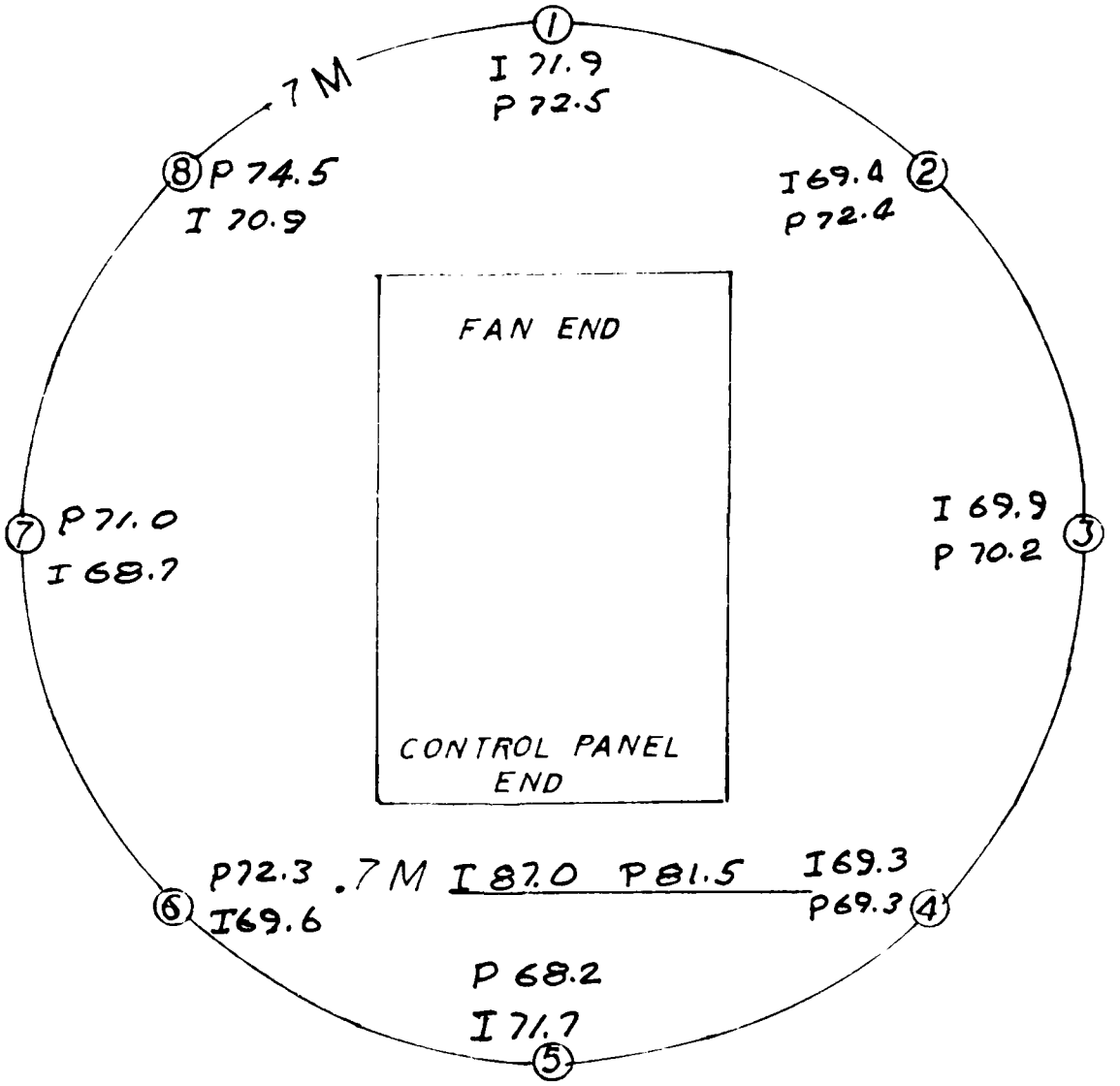


Figure 3. Noise level values - Set No. 1

Noise level data for Sets No. 2, 3 and 4 were taken with the sets in the final configuration, after all adjustments had been made to correct cooling problems. The noise levels for all three sets exceeded the design goals at all positions at which they were measured. The relative position and value of all measurements for the rated load condition, taken at 7 at .7 meters is presented in Figures 4, 5 and 6.

3.3.4.2 High Temperature. Set No. 1 shut down due to high engine coolant temperature during an attempt to stabilize at 125 ^{o}F ambient temperature. It was noted that the engine discharge cooling water temperature was only 213 ^{o}F at the time of high temperature shutdown. The thermocouple monitoring cooling water discharge temperature was checked and replaced and found not to be in error. The high temperature safety switch was replaced and found not to be in error. A thermocouple was installed in place of the high temperature safety switch. The unit was placed in battle short and operated at rated load. The unit was manually shut down when the cooling water out temperature reached the maximum allowable, 220 ^{o}F at which time water temperature at the safety switch location was 226 ^{o}F. The high temperature safety switch was by-passed and the unit was manually shut down when the coolant out temperature reached 220 ^{o}F during the remainder of testing.

It was noted during rated load operation that lubricating oil was being blown from the top of the dip stick tube. The engine crankcase pressure was measured and found to be a positive 3 inches of water. An investigation revealed that the crankcase ventilation filter element was drawn tight against the eductor tube opening thus restricting airflow from the crankcase. The filter element was removed and bent in such a manner as to prevent it from being drawn against and restricting the eductor tube opening. The crankcase pressure then dropped below atmospheric. Testing was continued and the following steps were taken to determine the cause and resolve the engine cooling problem.

- The cover was removed from the auxiliary cooling air inlet silencer and the center panel removed from the discharge air silencer. The unit continued to overheat.

- The cooling air inlet and discharger silencer assemblies were removed and the auxiliary air inlet cover installed resulting in the unit being in basically an unmodified configuration. The unit stabilized with the coolant out temperature at 216 ^{o}F and the coolant in temperature at 196 ^{o}F resulting in a 20 ^{o}F temperature differential. A 20 ^{o}F coolant temperature differential is considered abnormally high and is probably the result of insufficient coolant flow. Temperature differentials of between 7 and 10 ^{o}F are normally encountered with similar engine installations.

- Installed cooling air inlet silencer and opened auxiliary inlet silencer. The unit overheated.

GENERATOR SET 60 KW 60 HZ SN DZ02787

Set No. 2

NOISE LEVELS IN dBA

B = BEFORE MODIFICATION
A = AFTER MODIFICATION

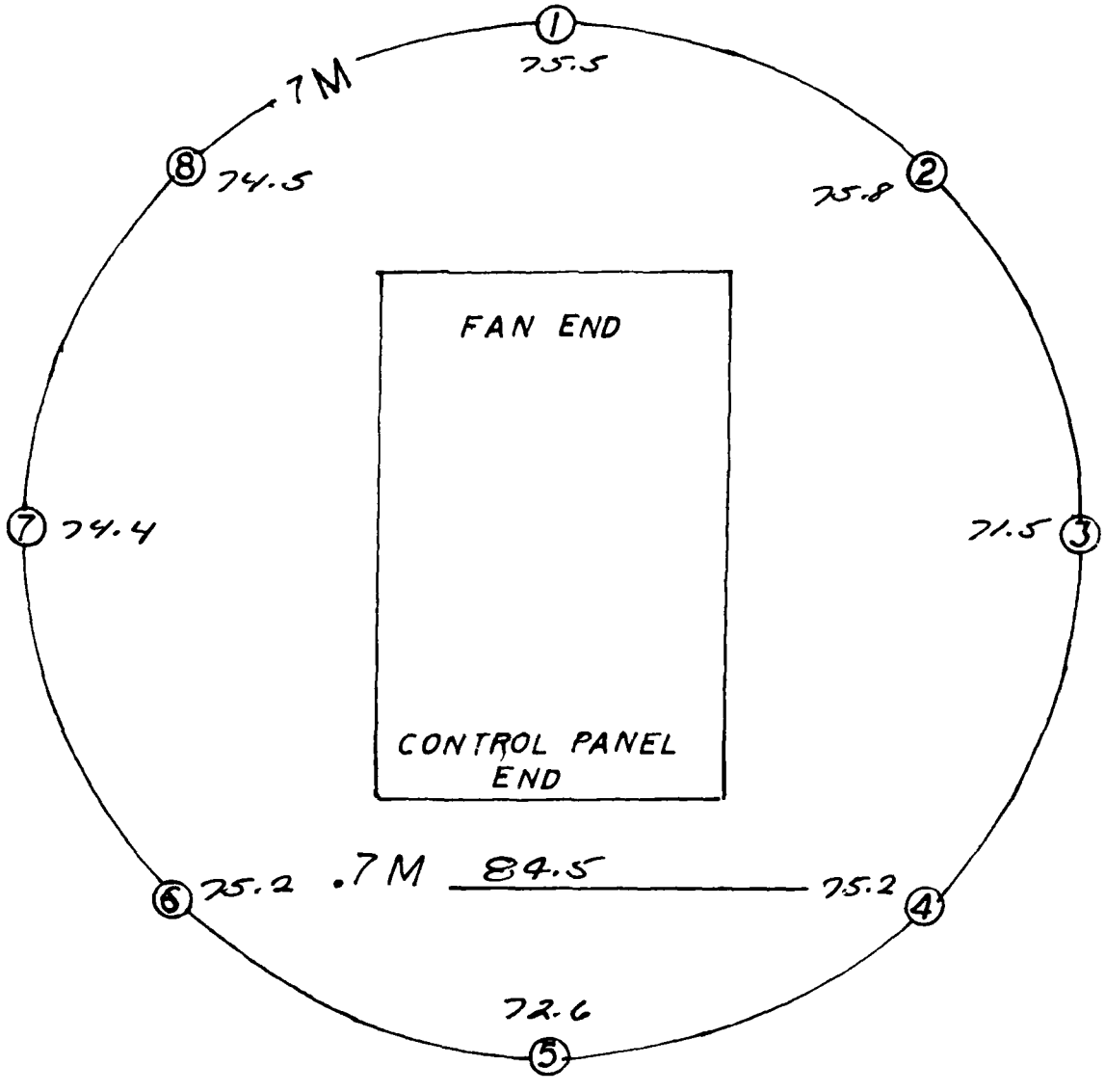


Figure 4. Noise level values - Set No. 2.

GENERATOR SET 60 KW 400 HZ SN EZ 06008

Set No. 3

NOISE LEVELS IN dBA

B = BEFORE MODIFICATION
A = AFTER MODIFICATION

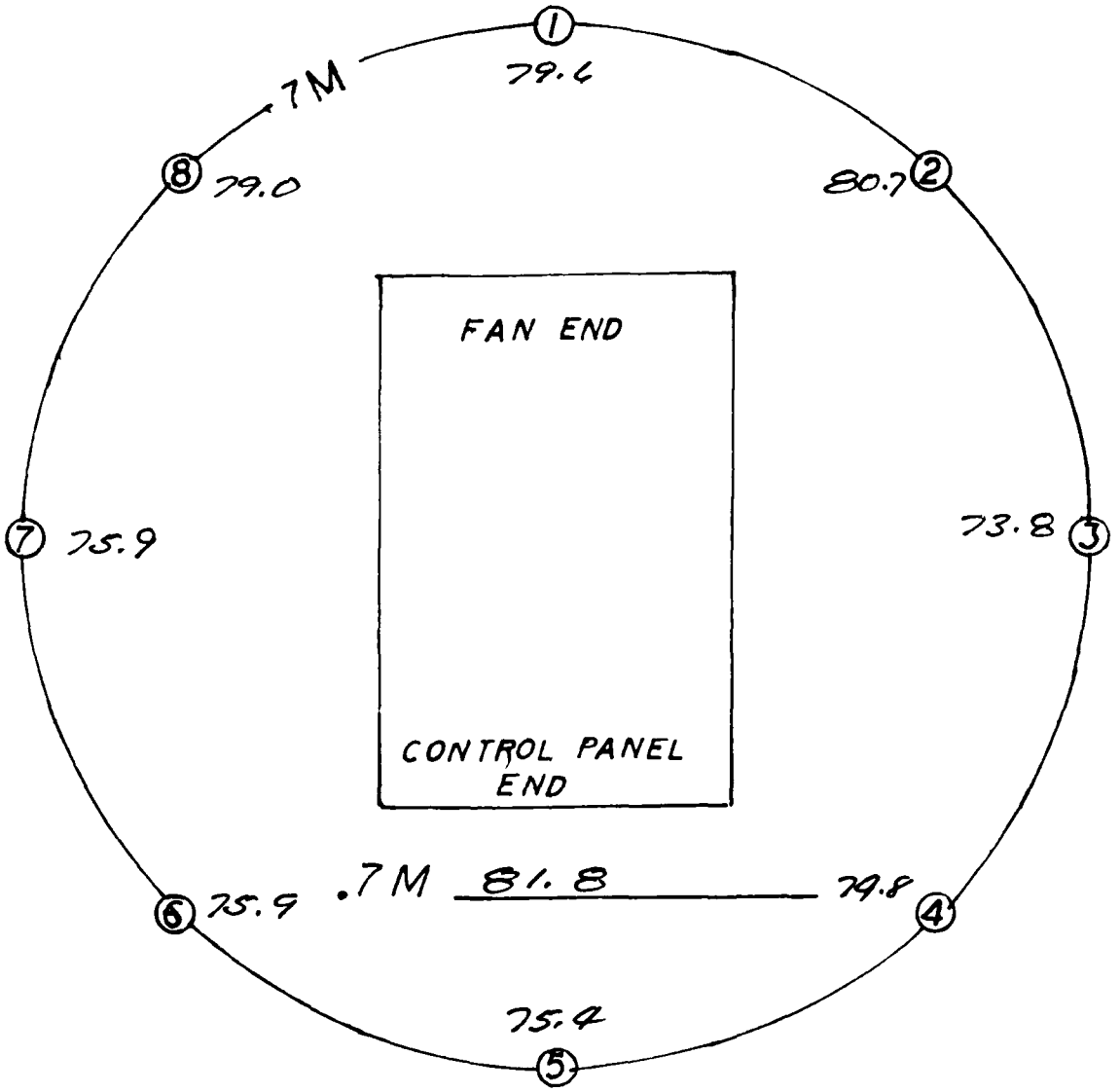


Figure 5. Noise level values - Set No. 3.

GENERATOR SET 60 KW 400 HZ SN F206050

Set No. 4

NOISE LEVELS IN dBA

. B = BEFORE MODIFICATION
A = AFTER MODIFICATION

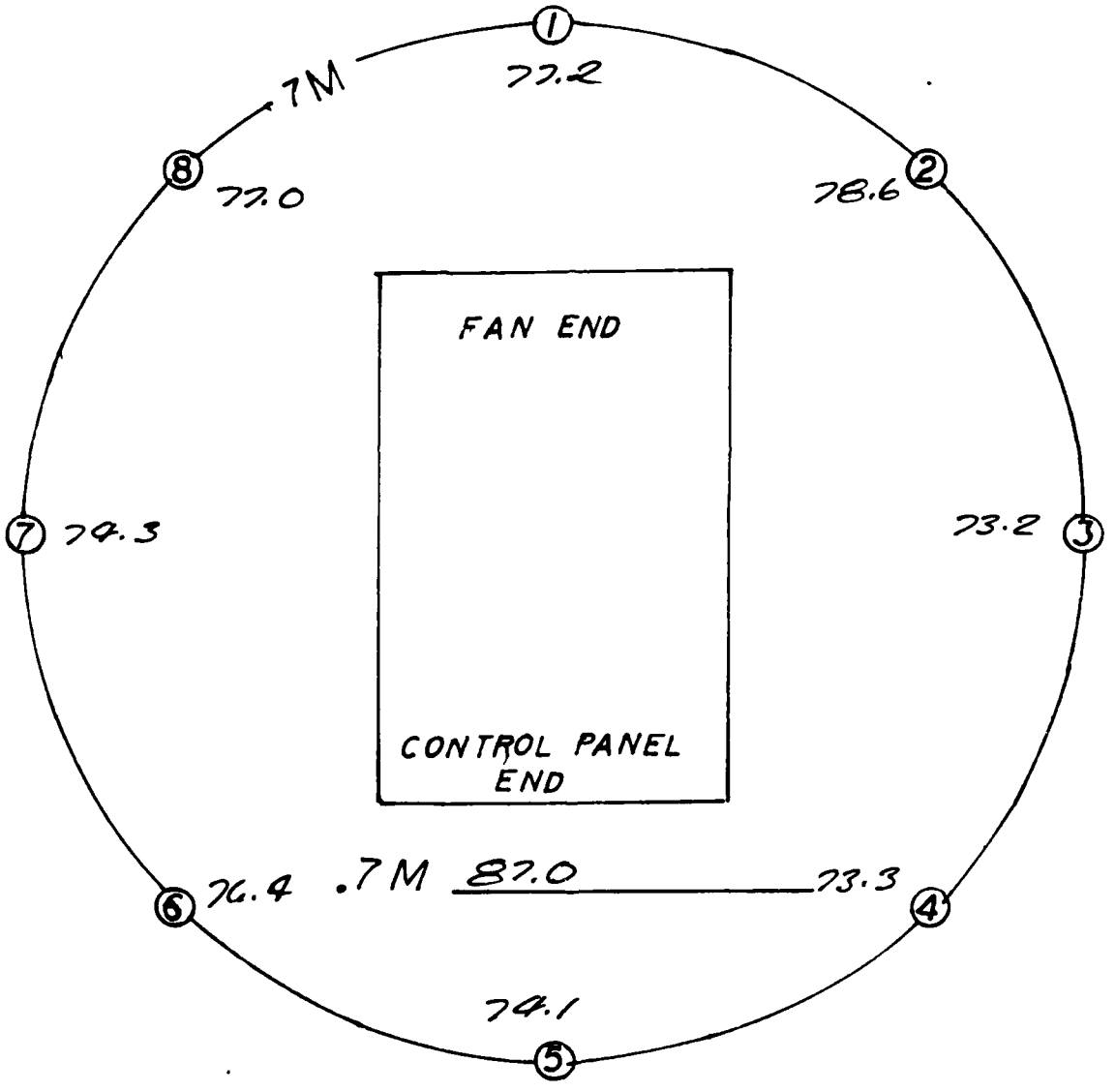


Figure 6. Noise level values - Set No. 4.

- o Installed larger crankshaft pulley to increase fan/water pump speed from 1800 to 2060 RPM in an effort to increase air and water flow. Installed cooling air discharge silencer. The unit continued to overheat. The use of the auxiliary air inlet silencer appeared to have little to no effect on engine cooling.

- o Replaced oversize crankshaft pulley with standard 6" dia. pulley and replaced 6" dia. water pump pulley with a 4.95" dia. pulley to further increase water pump/fan speed to 2180 RPM. The unit stabilized with the coolant out temperature at 216 ^{o}F and a 16 ^{o}F differential temperature.

High temperature testing was started and the Regulation Range, Circuit Interrupter (Short Circuit), Frequency and Voltage Regulation, Stability and Transient Response Tests were conducted. During the stabilization period in preparation for the Frequency Adjustment Range Test the engine again overheated and was shut down. The coolant out temperature had reached 220 ^{o}F and the coolant temperature at the high temperature cut out location measured 227 ^{o}F. No obvious reason for the increase in engine temperature was found. The decision was made to reduce the ambient temperature to 120 ^{o}F in order to complete the remainder of the high temperature tests. At 120 ^{o}F ambient the engine coolant out temperature remained below 215 ^{o}F.

3.3.4.3 Winding Resistance Test. Winding temperature rise determined through the winding resistance method ranged from a low of 25.7 ^{o}C to a high of 56.1 ^{o}C with all measurements being below the maximum allowable of 90 ^{o}C for Class "B" insulation and 100 ^{o}C for Class "F" insulation. There was no manufacturer's data available for a resistance comparison.

3.3.4.4 Regulation Range Test. Maximum voltage drop, 1.02 percent of rated voltage occurred as a result of the power shift from rated load to no load conducted with the voltage adjusted at 199 volts. This performance was within the allowable maximum 3 percent for voltage regulation.

3.3.4.5 Frequency Adjustment Range Test. The frequency could be adjusted from 58 Hz to 62 Hz as required.

3.3.4.6 Circuit Interrupter Test (Short Circuit). The unit satisfied all requirements for this test. The maximum trip time was 33.4 milliseconds, well within the allowable 150 milliseconds.

3.3.4.7 Circuit Interrupter Test (Overload Current). The circuit interrupter opened within the maximum allowable 10 minutes after the application of 130 percent rated load. The interrupter circuit required a maximum time of 9 minutes 26 seconds to respond and the overload indicator operated properly.

3.3.4.8 Circuit Interrupter Test (Over Voltage & Under Voltage). The circuit interrupter opened in an average of 718 MS at 155 volts, this was within the prescribed allowance of 1 second at 153 $\pm$3 volts.

3.3.4.9 Indicating Instrument Test (Electrical). All set instruments functioned within the prescribed accuracy range with the exception of the

Ammeter. The Ammeter error exceeded the allowable, 6 percent of full scale by 9.1 percent at one half rated load.

3.3.4.10 Frequency And Voltage Regulation, Stability And Transient Response (Short Term). Frequency undershoot exceeded the allowable 3 percent limit with a high of 5.61 percent. Frequency recovery time exceeded the maximum allowable of 3 seconds with a high of 3.75 seconds. All other frequency and voltage control requirements were met.

3.3.4.11 Frequency And Voltage Stability Test (Long Term). The unit failed to comply with the 3 percent frequency regulation requirement. The highest frequency regulation percentage was 3.33 percent for the rated to no load change. The unit also failed to conform with the maximum allowable 3 percent undershoot 3 minute recovery time. The highest frequency undershoot was 6.31 percent and the longest recovery time was 4.69 seconds. The unit was in compliance with all other frequency and voltage control requirements.

3.3.4.12 Voltage Dip And Rise (For Rated Load). The average voltage dip was 89 percent of rated voltage and the average rise was 110 percent of rated voltage both within the allowable limits. The maximum recovery time was .153 seconds which was within allowable limits.

3.3.4.13 DC Control Test. The unit started and operated properly at rated load using slave batteries with the set batteries disconnected. The unit continued to operate properly when the slave batteries were disconnected. The batteries could not be connected in reverse polarity due to excessive sparking. The battery charging alternator had not been disconnected. There were no spikes or notches in the voltage wave form during this time. The DC voltage could not be adjusted manually. The maximum current recorded during the test was 4.4 Amps which was within the allowable 5 Amps. The maximum voltage bandwidth was .58 percent and the frequency bandwidth was .30 percent, both within the allowable limits of 2 percent.

3.3.4.14 Hot Restart Test. The unit started and operated properly after a 5 minute shut down at high temperature.

3.3.4.15 Over Temperature Protective Device Test. With the engine cooling air blocked the unit shut down when the cooling water discharge temperature reached 219 ^{o}F, within the allowable of 222 ^{o}F $\pm$3 ^{o}F. The high temperature indicator fault light displayed the fault.

3.3.4.16 Maximum Power Test. Observed maximum power averaged 75.92 kW .92 kW in excess of the minimum requirement of 75 kW.

3.3.4.17 Drop Test. The Drop Test, Moderate Cold Starting and Operational and Torsiographic tests were not conducted.

3.3.4.18 Rail Impact. Set No. 4 was the only set subjected to Rail Impact Testing. The screen on the cooling air inlet silencer sustained a slight bulge when the panels slid forward. Several of the door latches became loose or opened. The control panel doors came open. The battery tray slid forward,

impacting and bending the sound attenuation panels on the doors. One of the panels in the cooling air discharge silencer bent.

3.3.5 Test Comments. The comments in this section are based on the performance data for just one set, therefore, the confidence level for population representation cannot be considered high.

In order to conduct a comprehensive analysis of the test data within the proper perspective it first becomes necessary to consider the initial program goals, the modifications designed to achieve them and the potential effect of the modifications on performance characteristics.

The two primary goals were to reduce noise levels and improve reliability.

The design changes necessary to reduce noise levels presented the greatest potential effect on performance characteristics. Some of the changes designed to reduce noise had an adverse effect on engine cooling. The reduction of the engine cooling fan speed to reduce noise also lowered the flow of cooling air and water. The installation of silencers on the cooling air inlet and discharge openings imposed an added restriction which further reduced air flow. The air inlet opening area was increased 6 percent and an auxiliary air inlet which further increased the inlet area by 28 percent was added to offset the restriction but the discharge opening area could not be increased. The use of the auxiliary air inlet was discontinued when test data indicated that it had no beneficial effect on engine cooling.

The installation of a high efficiency exhaust silencer increased the exhaust silencer surface area 600 percent. The exhaust silencer was subsequently insulated in an effort to reduce the added radiant heat within the set enclosure. In order to establish a better understanding of the diametric effect that some of the noise reduction modifications had on engine cooling, the results of the noise level and high temperature testing will be discussed concurrently in the following paragraphs.

The first modified set to be tested for noise levels was a 60 Hz Set Ser. No. DZ02785 equipped with an interim engine. The interim engine was installed to expedite the schedule. It was used for a limited evaluation of form, fit and function while the production engines were being assembled. Noise levels exceeded the design goals of 70 dBA at 7 meters at three of the measured positions. The highest measurement was 72.9 dBA. The vibration levels of the set appeared to be higher than those experienced with the 15 and kW sets after modification. It was hoped that the vibration levels would diminish with the installation of the production engine thus reducing noise levels.

The vibration and noise levels were essentially the same with the production engine installed. Experience gained with the 15 and 30 kW sets indicated a high probability that cooling problems would be encountered during high temperature testing of the 60 kW. In anticipation of such a problem the 60 kW set was configured like the 30 kW sets. The center panel was removed from the cooling air discharge silencer. The set was noise level tested in this configuration; however, only the levels at three positions which were most effected by the changes, Pos. 1, 2 and 8, were remeasured. The noise levels

at these three positions increased considerably by 2.8, 3.4 and 1.7 dBA, respectively.

The set was to be fully retested for noise levels after high temperature testing during which the final modification configuration would evolve. The test program was terminated before this could be accomplished.

Engine overheating problems were encountered at the beginning of high temperature testing and the corrections described in paragraph 3.3.4.2 were made. These corrections appeared to alleviate the engine cooling problem until the frequency adjustment range test when the engine coolant temperature was reported to have reached 220 ^{o}F. The ambient temperature was reduced to 120 ^{o}F for the remainder of testing based on this report. An examination of the data indicates that the coolant temperature had in fact only reached 218 ^{o}F. Further examination of the data for the remainder of the testing conducted at 120 ^{o}F Ambient indicates that the engine coolant temperature was low enough to permit operation at 125 ^{o}F Ambient.

Hercules was apprised of the engine crank case ventilation problem. They furnished a redesigned crank case ventilation filter with a smaller diameter element and a baffle to prevent the type of restriction described in paragraph 3.3.4.2.

Even though operation at 125 ^{o}F Ambient could have been maintained the set configuration which was necessary to accomplish this would not be acceptable from a noise level standpoint. This fact is evidenced by the test data for sets 2, 3 and 4 which were configured in this manner when they were noise level tested. The noise levels measured at 7 meters during these tests exceeded design goals by as much as 10 dBA at the fan end of the 400 Hz sets. When comparing these noise levels with these for Set No. 1, measured prior to high temperature testing it was found that the average dBA level rose by 3 dBA for the other 60 Hz set and by 4.2 and 5.6 dBA for the two 400 Hz sets. The only difference in configuration between Set No. 1 and Sets No. 2, 3 and 4, when these tests were conducted was fan speed and the auxiliary cooling air inlet. The auxiliary air inlet was closed when Sets 2, 3 and 4 were tested which should reduce noise levels. The fan/water pump speed was increased by 21 percent.

It is doubtful that the noise level goals can be achieved while maintaining the same fan/water pump speed which was necessary for proper engine cooling at high temperature. The high temperature differential between the coolant entering and leaving the engine indicates a need for higher coolant flow. A higher capacity water pump would permit the operating speed of the fan/water pump to be lowered. A higher rate of coolant flow would probably aid in reducing the 6 ^{o}F temperature gradient between the high temperature safety switch location and the water leaving the engine.

The stiffness of the engine/generator mounts could be reduced thus lowering vibration levels. The selection of the mounts used for the modification was based on the original engine weight which was considerably higher than that of the engine which was used.

The engine cooling and noise level problems will require a concurrent solution involving vibration reduction, improved cooling air and water circulation and additional insulation. A complete noise source analysis would provide guidance for improving sound attenuation.

Other operational characteristics did not appear to be influenced by the modifications.

Generator winding temperatures were well within the allowable range indicating the generator was cooling properly. There was no manufacturer's data available with which to make winding resistance comparisons.

The set ammeter error exceeded the maximum allowable 6 percent of full scale by 9.1 percent.

No attempt was made to calibrate the meters or determine the cause for error. A cause for some of the inaccuracies could be associated with initial calibrations. Improved test and inspection by the manufacturer should reduce the incidence of excessive meter error. There was no data which associated the meter inaccuracies with the modifications which were performed. To the contrary, the reduction in vibration levels resulting from engine/generator mount modifications should enhance the life of the meters which have been traditionally subject to vibration related failures.

The maximum allowable frequency undershoot and recovery time were exceeded during the short term frequency and voltage control test. The maximum allowable frequency regulation, undershoot and recovery time were exceeded during the long term test. The frequency undershoot and recovery time problem could have resulted from the engine's inability to properly respond to the governor commands or the governor could be at fault. Additional testing and investigation would be required to isolate the fault. The frequency regulation problem encountered during the long term test can probably be attributed to the governor.

The battery charging alternator D.C. voltage could not be adjusted to the required 32 volts. The voltage adjustment problem could be the result of regulator damage sustained during the reverse polarity portion of the test. The reverse polarity test was conducted with the battery charging alternator connected which caused severe arcing. This situation can be prevented by modifying Test Method 655.1 of MIL-STD-705 to require the battery charging alternator to be disconnected prior to the reverse polarity test.

New latches were installed to provide a better door seal and prevent the door from opening during rough handling. Some of these latches bent during rail impact testing causing them to become loose and allowing a door to come open. The latches should be made from stronger or heavier material to prevent bending.

The battery tray latch was undamaged by rail impact testing, however, it did release and close during impact allowing the tray to slide forward. A stronger return spring or a lighter handle will be required to prevent the latch from opening on impact.

The stop bars on the cooling air silencers should be made wider to prevent the panels sliding forward on impact.

4. CONCLUSIONS

- Less than 25 percent of the testing scheduled for the 60 kW generator sets, under this program had been completed when testing was terminated. The resulting low volume of data makes it extremely difficult to arrive at any firm conclusions. However, some general conclusions can be expressed based on the limited amount of data which is available.

- Problems in two areas, essential to the goals of this program have yet to be resolved, engine cooling and sound attenuation.

- Improvements to the engine cooling system will lessen the engine cooling problem and aid in solving noise level problems through lower fan speed. The proper improvement in the design of sound attenuation components can result in lower noise levels and enhance engine cooling.

- A reduction in the stiffness of the engine/generator mount will aid in the reduction of noise levels.

- There is insufficient data to determine if the engine is capable of developing adequate power to continuously comply with all performance requirements.

5. RECOMMENDATIONS

- Consult with the engine manufacturer regarding the improvement of engine cooling.

- Install softer engine/generator mounts which are available in the same configuration as those currently in use.

- Continue engine testing, including torsiographic analysis to determine the adequacy of the engine.

- Conduct a noise source analysis to identify the areas requiring additional or improved sound attenuation.

- Conduct additional testing to evaluate reliability.

APPENDIX A

TEST PLAN FOR IMPROVED 60 kW DoD GENERATOR SET

Test Plan No. TP555-2140.2
P. O. No. 50199
Date: 28 January 1988

National Technical Systems

TEST PLAN
FOR
SELECTED PERFORMANCE CHARACTERISTICS OF RE-ENGINED GENERATOR SETS, 60 KW WITH MODIFICATIONS FOR RELIABILITY AND NOISE ABATEMENT IMPROVEMENT

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National Technical Systems

REVISION PAGE

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National Technical Systems

Test Plan No. TP555-2140.2
P. O. No. 50199
Date: 28 January 1988

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National Technical Systems

Test Plan No. TP55-2140.2
P. O. No. 50199
Date: 28 January 1988

1.0 PURPOSE

The purpose of this test plan is to provide a means for determining selected performance characteristics of 60 KW utility and precise power re-engined generator sets with modifications for improvement in reliability and noise abatement.

2.0 REFERENCES

2.1 VSE Corporation Purchase Order No. 50199 with attached Statement of Work, dated 6 August 1987.

2.2 MIL-STD-705

2.3 MIL-STD-1474

2.4 FEDERAL SPECIFICATION VV-F-800C

2.5 MIL-L-2104

2.6 MIL-L-46167A

3.0 TEST ITEM DESCRIPTION

The test items will be generator sets with modifications for reliability and noise abatement as follows:

Quantity	Description
2	60 KW, 60 Hz
2	60 KW, 400 Hz

4.0 INSTRUMENTATION

All instrumentation subject to calibration shall be calibrated against standards traceable to the National Bureau of Standards prior to use.

4.1 Temperature

Temperature measurements of the generator sets shall be made with chromel-alumel and copper constantan thermocouples. Ambient temperatures shall be measured with eight (8) thermocouples wired in parallel to indicate and average ambient temperature. Four (4) of the thermocouples shall be immersed in oil to minimize the effects of thermal transients. Temperatures shall be recorded on a Fluke data logger.

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4.2 Pressure

Engine exhaust and intake pressure shall be measured with mercury filled manometers.

4.3 Electrical Measurements

A Texas Instruments Co. Voltage and Frequency Recorder shall be used to monitor output of the generator sets as required by MIL-STD-705.

5.0 TEST PLAN

5.1 General

This test plan was developed with MIL-STD-705 as a basis. Data obtained from the tests specified herein should contribute to further improvements in engine and generator reliability and noise abatement.

All testing per MIL-STD-705 specifying tests to be conducted on all available generator voltage inputs shall be tested on the high voltage input only.

Fuel oils used for the tests shall be in accordance with FEDERAL SPECIFICATION VV-F-800C.

Oil Lubricants used for the tests shall be in accordance with MIL-L-2104.

5.2 Tests

5.2.1 Noise Level Test

The generator sets, as listed in paragraph 3.0 above shall be subjected to this test. Noise levels shall be measured in accordance with MIL-STD-1474 (Paragraph 5.1).

An open area of uniform grade and free of reflecting surfaces located within 100 feet of either the generator set or microphone shall be used for conducting this test. With the generator set operating under rated load and no load, noise levels shall be measured at nine positions, i.e., 7 meters from the center of each side, 7 meters from the corners of the set and 0.7 meters from the control panel. The microphone shall be positioned 1.2 meters above the ground at each position of measurement. MIL-STD-1474 contours shall be taken at 12 equal (horizontal) arc measurements with one increment including data from the noisest position.

Maximum noise levels at positions from the center of each side and the corners shall not exceed 70 dBA; from the control panel, 85 dBA.

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5.2.2 High Temperature Test (+125°F) - Method 710.1, MIL-STD-705

Each generator set shall be placed in a high temperature chamber and the electrical, thermal and load instrumentation continuously monitored and recorded throughout the test.

Each generator set shall be started and operated at rated speed, voltage and load until stabilized at +125°F. Stabilization shall be considered achieved when generator (or exciter) field, voltage, and current readings remained unchanged for 4 consecutive 10 minute readings. Following stabilization, each generator set shall be subjected to the subtests described below.

5.2.2.1 Temperature Rise (Winding Resistance) Test - Method 710.1.3.2 (a)-(e), MIL-STD-705

The cold winding resistance shall be measured with a Shallcross Model 638 Kelvin-Wheatstone bridge or equivalent resistance measuring instrument after a minimum of 12 hours non-operating storage at normal ambient temperature. The hot winding resistance shall be measured immediately after shutdown following temperature stabilization in accordance with the procedure described in Method 710.1c of MIL-STD-705. The stator windings shall be measured on all four generator sets.

5.2.2.2 Regulator Range Test - Method 710.1(f) 511.1 MIL-STD-705

With the generator sers stabilized at rated load, voltage and frequency the required instrument readings shall be recorded. Subsequent to this event, the series of load changes from no load, to rated load, to no load, etc., with corresponding terminal voltage adjustments and instrument readings as specified by the test method shall be conducted.

5.2.2.3 Frequency Adjustment Test - Method 710.1(f) 511.2, MIL-STD-705

The generator sets shall be operated at rated load, voltage and frequency until stabilized conditions are achieved, as indicated when four consecutive voltage and current readings of the generator field either remained unchanged or have only minor variations with no evident increase or decrease in value after the last load, voltage or frequency adjustment has been made. With stabilization established the only generator set control adjustments made shall be those on the control panel frequency adjust device. The required series of generator set frequency adjustments with corresponding loads and associated instrument readings, as specified by the test method, shall be conducted.

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5.2.2.4 Circuit Interrupter Test, (Short Circuit) - Method 710.1(f) 512.1, MIL-STD-705

The generator sets shall be operated at rated voltage, frequency and load. Short circuits shall be applied at all possible short circuit conditions through the use of a switch. Prior to closing the short circuiting switch, instrument readings shall be taken as well as calibration traces of load currents and 60 Hz time reference base. An oscillograph shall be used to record maximum short circuit current and circuit interrupter trip time.

5.2.2.5 Circuit Interrupter Test (Overload) - Method 710.1(f) 512.2, MIL-STD-705

The generator sets shall be started, operated and stabilized at rated voltage, frequency and load. After stabilization, 130 percent overload current shall be applied to a phase, independent of the other phases. The above sequence shall be conducted for each phase until all phases have been subjected to the overload. The final condition shall consist of applying overload to all phases simultaneously. Upon application of the overload for each condition cited, time and instrument readings wherein the circuit interrupter fails to open within 15 minutes, the interrupter shall be manually opened. After each overload operation, the generator sets shall be subjected to a 15 minute cool-down at rated current. After completion of the 130 percent overload conditions, the generator sets shall be operated at 110 percent overload current for two hours.

5.2.2.6 Circuit Interrupter Test (Over Voltage and Under Voltage) - Method 710.1(f) 512.3, MIL-STD-705

The generator sets shall be equipped with the required instrumentation and circuitry necessary to perform the over voltage and under voltage circuit interrupter test.

The generator sets shall be started and operated, at rated frequency and no load. The over-under voltage supply test circuit shall be adjusted, as required, to perform the over voltage test (Proc I). The test, with the recording oscillograph operating, will be performed three times.

At the conclusion of the over voltage test the over-under voltage supply test circuit shall be adjusted, as required, to perform the under voltage test (Proc II). The test, with the recording oscillograph, shall be performed three times.

5.2.2.7 Indicating Instrument Test - Method 710.1(f) 513.2, MIL-STD-705

Each generator set shall be initially operated at no load and rated frequency and all generator set and master instrument readings for each selector switch position recorded. Generator set frequency shall then

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be reduced to obtain a generator set frequency indication at the extreme low end of the instrument's operating range, at which occurence all generator set and master instrument readings shall be recorded. following this event, set frequency shall be increased to obtain a generator set frequency indication at the extreme high end of the instrument's operating range. All generator set and master instrument readings shall then be recorded. Upon completion of the above series at a no load condition, the complete series shall be conducted at load ratings of 1/4, 1/2, 3/4 and 4/4 load.

5.2.2.8 Frequency and Voltage Regulation, Stability and Transient Response Test (Short Term) - Method 710.1(f) 608.1, MIL-STD-705

A Texas Instrument Co. Model PDR shall be used for recording the voltage and frequency throughout the test. The generator sets shall be operated at rated load, rated speed and voltage until stabilized conditions have been achieved. Load changes from no load to 4/4, 3/4, 2/4, 1/4 and 4/4 shall be made with the recording chart speed at 12 in/min. The data shall be simultaneously recorded on data sheets at each of the respective load conditions.

5.2.2.9 Long-Term Frequency and Voltage Stability Test - Method 710.1(f) 608.2, MIL-STD-705

The generator sets shall be stabilized at rated load, frequency and voltage as determined by four consecutive voltage and current readings of the exciter field. No further adjustments to the voltage and frequency controls shall be allowed for the remainder of the test.

1. Perform short term stability test at rated load.
2. Operate at rated load for the long term stability period of four hours.
3. Stabilize the set at no load as above.
4. Perform short term stability test at no load.
5. Operate at no load for the long term stability period of four hours.
6. Apply three no load rated load transients and three rated load to no load transients.

5.2.2.10 Voltage Dip and Rise (Rated Load) Test - Method 710.1(f) 619.2, MIL-STD-705

Each generator set shall be stabilized at rated load, voltage and frequency. Voltage and current sensing inputs shall be connected to the high speed oscillograph with the amplitudes of the traces adjusted to minimums of 3.0 and 1.5 inches respectively. The oscillograph speed shall be adjusted such that individual waveform peaks were visible. A 60 Hz timing trace shall be used on the chart for actual chart speed reference.

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The following sequence shall be performed three times while recording the voltage and current traces on the oscillograph chart:

a. The load and field instrumentation shall be read and recorded.
b. The load shall be reduced to zero in one step.
c. When the voltage and frequency return to steady-state conditions after the transient period, the load and field instrumentation shall be recorded.
d. The load shall be reapplied in one step.
e. After steady-state conditions have been reestabilished, and load and field instrumentation shall be recorded.

5.2.2.11 DC Control Test - Method 710.1(f) 655.1 MIL-STD-705

Each generator set's batteries shall be disconnected and the generator sets started with slave batteries and cable. After starting, the generator sets shall be shut off and slave battery's polarity reversed. An attempt shall be made to start each generator set with the slave battery polarity reversed. After proper polarity connection the generator sets shall be started and operated at rated voltage, frequency and load. During this period oscilloscope wave forms shall be photographically documented and instrument readings recorded. With sets operating at rated load, the the slave batteries shall be disconnected and the load removed and reapplied. The load shall again be removed and reapplied two additional times. After the third time and with the generator set operating at rated load, instrument readings shall be recorded and oscilloscope wave forms photographically documented. Upon completion of the above sequence, the battery charging system voltage shall be adjusted to the maximum specified with the generator set operating at rated load. With the battery charging system so adjusted, the load shall be removed and reapplied three times. After the third time and with the generator set at rated load, instrument readings shall be recorded and oscilloscope wave forms photographically documented. Subsequent to the above (battery charging system adjusted to maximum specified), with the generator set at rated load the battery charging system shall be adjusted to the minimum specified and the rated load to no load to rated load etc., cycle shall be repeated three times. After the third time and with the generator set at rated load, instrument readings shall be recorded and oscilloscope wave forms photographed.

5.2.3 Overtemperature Protective Device Test - Method 515.2, MIL-STD-705

The generator sets shall be instrumented, started and operated at rated voltage, frequency and load. The cooling air to the generator set shall be blocked and generator set coolant temperature obtained via an installed thermocouple. The temperature at which the overtemperature protection device activates shall be generator recorded. When the generator set has a

warning alarm device, the temperature at which it activates shall be recorded. Should the generator set not shut down when the temperature exceeds the maximum trip valve, the generator set shall be shut down immediately and the test discontinued.

5.2.4 Maximum Power Test - Method 640.1, MIL-STD-705

The generator sets shall be instrumented and loaded in accordance with method 640.1. The generator set circuit interrupter shall be bypassed.

The sets shall be started and stabilized. The maximum output power of the generator sets shall be determined and maintained for two minutes. The actual method and procedure employed shall depend upon the type of generator and engine the generator set is equipped with.

At the end of the two minute test, the load shall be reduced to rated load and the generator sets allowed to cool for 10 minutes. The maximum power shall be repeated until three valid sets of data are obtained. The results of the three valid maximum power shall be averaged to determine the observed maximum power value.

5.2.5 Torsiographing Test - Method 504.2, MIL-STD-705

Following load connection and instrumentation the step listed below shall be accomplished:

Start and operate the generator sets at rated voltage, frequency (speed) and load. All instrument readings and torsiographing output shall be recorded.

5.2.6 Starting and Operating Test (Moderate Cold) (-25°F) - Method 701.2, MIL-STD-705

The generator sets shall be prepared for low temperature testing in accordance with the procedure outlined in the test method. MIL-L-46167A lube oil and DF-1 diesel fuel oil shall be used for this test. The lube oil and fuel filters shall be changed in order to assure that all normal ambient oil and fuel have been eliminated from the engine systems prior to the low temperature test. The generator sets shall be placed in the low temperature chamber and electrical and thermal instrumentation connected. The generator sets shall be started by using the electrical start method in accordance with the starting procedure attached to the generator sets. Following the required rated load no load cycles, each generator set shall be subjected to the subtests described below:

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5.2.6.1 Rheostat Range Test (for sets so equipped) - Method 510.1.3.2 (a) - (f), MIL-STD-705

The generator sets shall be started with the voltage regulator selector switch in the "MANUAL" position and under a no load condition. Instrumentation readings shall be recorded following manual field rheostat adjustments under no load and rated load conditions as specified by the test method.

5.2.6.2 Regulator Range Test - Method 511.1.3.2 (a) - (t), MIL-STD-705

With generator sets stabilized and at rated load, voltage and frequency, the required instrument readings shall be recorded. Subsequent to this event, the series of load changes from no load, to rated load, to no load, etc., with corresponding terminal adjustments and instrument readings as specified by the test method shall be conducted.

5.2.6.3 Panel Instrument Test (Electrical) - Method 513.2.3.2 (a) - (l), MIL-STD-705

Each generator set shall be initially operated at no load and rated frequency while all set and standard instrument readings for each selector switch position is recorded. The generator set frequency shall then be reduced to obtain a set frequency indication at the extreme low end of the instrument operating range at which occurence all set and standard instrument readings shall be recorded. The set frequency shall then be increased to obtain a set frequency indication at the extreme high end of the instrument's operating range. All generator set and standard instrument readings shall then be recorded. Upon completion of the above series at no load condition, the complete series shall be repeated at 1/4, 2/4, 3/4, and 4/4 loads.

5.2.6.4 Voltage and Frequency Regulation, Stability and Transient Response Test (Short Term) - Method 608.1, MIL-STD-705

A Texas Instruments Co. Model PDR shall be used for recording the voltage and frequency throughout the test. The tests shall be operated at rated load, frequency and voltage until stabilization conditions have been achieved. Load changes from no load to 4/4, 3/4, 2/4, 1/4 and 4/4 shall be made with the recording chart speed operating at 12 in/min. The data shall be simultaneously recorded on data sheets at each of the respective conditions.

5.2.7 Starting and Operating Test (Extreme Cold) (-65°F) - Method 701.2, MIL-STD-705

The generator sets shall be prepared for low temperature testing in accordance with the procedure outlined in the test method. MIL-L-46167A lube oil and DF-4 diesel fuel oil shall be used for this test. The lube

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oil and fuel filters shall be changed in order to assure that all normal ambient oil and fuel have been eliminated from the engine systems prior to the low temperature test. The generator sets shall be placed in the low temperature chamber, and electrical and thermal instrumentation connected. The generator sets shall be stored at -65°F ambient for 24 hours The generator sets shall be started by using the electrical start method in accordance with the starting procedure attached to the generator sets Following the required rated load, no load cycles, each set shall be subjected to the subtests described below:

5.2.7.1 Rheostat Range Test (for sets so equipped) - Method 510.1.3.2 (a) - (f), MIL-STD-705

The generator sets shall be started with the voltage regulator selector switch in the "MANUAL" position and under a no load condition. Instrumentation readings shall be recorded following manual field rheostat adjustments under no load and rated load conditions as specified by the test method.

5.2.7.2 Regulator Range Test - Method 511.1.3.2 (a) - (t), MIL-STD-705

With generator sets stabilized and at rated load, voltage and frequency, the required instrument readings shall be recorded. Subsequent to this event, the series of load changes from no load, to rated load, to no load, etc., with corresponding terminal adjustments and instrument readings as specified by the test method shall be conducted.

5.2.7.3 Panel Instrument Test (Electrical) - Method 513.2.3.2 (a) - (l), MIL-STD-705

Each generator set shall be initially operated at no load and rated frequency while all set and standard instrument readings for each selector switch position are recorded. The generator set frequency shall then be reduced to obtain a set frequency indication at the extreme low end of the instrument operating range at which occurence all generator set and standard instrument readings shall be recorded. The set frequency shall then be increased to obtain a set frequency indication at the extreme high end of the instrument's operating range. All generator set and standard instrument readings shall then be recorded. Upon completion of the above series at a no load condition, the complete series shall be repeated at 1/4, 2/4, 3/4, 4/4 loads.

5.2.7.4 Voltage and Frequency Regulation, Stability and Transient Response Test (Short Term) - Method 608.1, MIL-STD-705

A Texas Instruments Co. Model PDR shall be used for recording the voltage and frequency throughout the test. The generator sets shall be operated at rated load, frequency and voltage until stabilized conditions have

been achieved. Load changes from no load to 4/4, 3/4, 2/4, 1/4, and 4/4 shall be made with the recording chart speed operating at 12 in/min. The data shall be simultaneously recorded on data sheets at each of the respective conditions.

5.2.8 Drop Test (Ends) - Method 740.3b, MIL-STD-705

The generator sets shall be instrumented for measuring load conditions, field voltage, current and ambient temperatures. After instrumentation, the generator set shall be subjected to a voltage and frequency regulation test, method 608.1 (performed at rated load only). Following the voltage and frequency regulation test, one end of the generator set shall be raised and supported by a 2-inch timber placed at right angles to the skids, within 6 inches of the skid frame end. The opposite end shall then be raised to the height specified in the procurement document and released to free fall onto a concrete surface. The raise/free fall cycle shall be executed for a total of six (6) cycles. The above steps shall be repeated for the opposite end. Following the twelve drops (six per end), the generator set shall be visually inspected for damage. A voltage and frequency regulation test, method 608.1 (performed at rated load only) shall then be performed again.

APPENDIX B

TEST DATA FOR THE 60 kW DoD GENERATOR SET

Final Report No. FR555-2140
P.O. No. 50199
Date 29 March 1988

VOLUME V

TEST DATA AND OPERATORS LOG

FOR

DIESEL ENGINE DRIVEN GENERATOR SETS
60 KW, MEP 006A AND MEP 115A

Gen Set 60 KW 60 Hz

S/N D202785

HIGH TEMPERATURE TEST (710.1c)

Regulator Range (511.1)	✓
Frequency Adj. Range (511.1)	✓
Circuit Interrupter (Short Circuit) (512.1)	✓
Circuit Interrupter (Overload Trip) (512.2)	✓
Circuit Interrupter (512.3) (Overvoltage/UNdervoltage)	✓
Indicating Instrument (513.2)	*
Freq. and Voltage Regulation Stab. &Trans Response (608.1)	*
Freq. and Voltage Stability (Long Term) (608.2)	*
Voltage Dip & Rise (619.2)	✓
DC Control (655.1)	*
Winding Resistance (401.1a)	✓
710.1.3.2h HIGH TEMP START	✓

MODERATE COLD (701.2c)

Voltage/Frequency Regulation, Stability & Trans Resp. (608.1)	1
Panel Instrument (513.2)	1
Regulator Range (511.1)	1
Starting & Operating (701.2)	1
	1
	1

EXTREME COLD (701.1c)

Voltage /Frequency Regulation, Stability & Trans Resp. (608.1)	1
Panel Instrument (513.2)	1
Regulator Range (511.1)	1
Starting & Operating (701.2)	1

AMBIENT TEMPERATURE

Torsiographing Test (504.2)	1
Winding Resistance (401.1a)	✓
Sound Level (661.2b)	*
Drop Test (740.3b)	1
Max Power (640.1)	✓
Overtemperature Protective Device (515.2)	✓

* FAILED TEST

1 TEST NOT CONDUCTED

60KW 60Hz

D2027855

BOORUM & PEASE

ACCOUNT BOOK 12¼ IN x 8¼ IN

150 PAGES		300 PAGES		500 PAGES		RULING
STOCK NUMBER	VM COMPUTER NUMBER	STOCK NUMBER	VM COMPUTER NUMBER	STOCK NUMBER	VM COMPUTER NUMBER	
No. 87¼-150-J		87¼-300-J		87¼-500-J		Journal
No. 87¼-150-SEL		87¼-300-SEL		87¼-500-SEL		S E Ledger
No. 87¼-150-DEL		87¼-300-DEL		87¼-500-DEL		D E Ledger
*No. 87¼-150-LD		*87¼-300-LD		*87¼-500-LD		Long Day
No. 87¼-150-R 64 6718		87¼-300-R 64 6738		87¼-500-R 64 6758		Record
No. 87¼-150-R IT		87¼-300-R IT		87¼-500-R IT		Record Indexed

*LONG DAY SIZE 15¾ IN x 8¼ IN

BOORUM & PEASE CO. ELIZABETH N J 07208 U S A MADE IN U S A

19 Nov 1987

0900 Flushed Cooling System and Filled with
1100 Antifreeze Solution

20 Nov 1987

0837 Performed Sound Level Test
TO
0911 Unit Failed @ R/L @ Position 1, 5, 8+9
Returned Unit To Use For Engine
Change

2 Dec 1987
Unit Returned From Use After
Engine Change
Note: Several of thermocouples
installed Prior To Engine Change
were Removed or Cut and will have
To Be Replaced.

3 Dec 1987

0830 Performed Sound Level Tests w/ upper
TO
0935 Inlet Baffle open and Complete Discharge
Baffle. Unit Failed @ N/L Points 6+8
and R/L Points 1, 2, 3, 6, 7, 8+9

1435 Performed Sound Level Test with upper
TO
1500 Inlet Baffle Blocked. Unit Failed @
N/L Point 8 and R/L Point 3, 6, 7, 8

1530 Removed Center Section from Discharge
TO
1610 Baffle, and Replaced Brace. Removed
Cover Plate from "upper" Inlet Baffle. Ran
Sound Level Test on Position 1, 2+8
only. Unit Failed @ N/L 1, 2+8
and R/L 1, 2+8

4 Dec 1987

0830 STARTED Repairing Damaged on Removed T/C's REPAIRED 13 T/C's
TOOK APPOX. 6 HRS

5 DEC 1987

0830 ALSO FOUND LOOSE EXHAUST MANIFOLD BOLTS (2)
1 INTAKE BOLT LOCATED ON PIPE TO TURBO
2 BOLTS FELL OUT OF LEFT SIDE LOWER SKID IN CENTER OF SET
REMOVED END BAFFLE (3) NUT INSERTS FELL OUT (EXHAUST BAFFLE)
STARTER WIRE OFF

8 DEC 1987

1400 STARTED UNIT TO STABILIZE FOR REGULATOR RANGE TEST TM 1.1.3.2(F)(1) METHOD STD 1
1424 UNIT SHUT SELF DOWN ON OVERTEMP
TRIPPED ON OVERTEMP AT 219°F WATER OUT.
ADDITIONAL TOP BAFFLE ON INTAKE WAS OMD.
REMOVED CENTER SECTION OF DISCHARGE BAFFLE.
1431 RESTARTED UNIT IN BATTLE SHORT AT NO LOAD
1434 REMOVED BATTLE SHORT
1435 PLACE UNIT ON RATED LOAD
1443 UNIT SHUT SELF DOWN ON OVERTEMP
TRIPPED ON OVERTEMP AT 215°F WATER OUT
1445 START UNIT AT BATTLE SHORT NO LOAD FOR COOL DOWN. ADJUSTED CHANGE TEMP TO 120°F
1446 REMOVED BATTLE SHORT UNIT IN NO LOAD
1450 PLACED UNIT IN RATED LOAD
1457 UNIT SHUT SELF DOWN ON OVERTEMP
TRIPPED ON OVERTEMP AT 216°F.
1458 START UNIT IN BATTLE SHORT NO LOAD FOR COOL DOWN
1504 REMOVED BATTLE SHORT
1505 SHUT UNIT DOWN

---

8 Dec 1987

1529 START UNIT PLACE IN RATED LOAD. ADIATOR CHAMBER 110°F
1541 SHUT DOWN ON OVER TEMP AT RATED LOAD
1544 STARTED UNIT ON BATTLE SHORT TO COOL DOWN
1547 TOOK UNIT OUT OF BATTLE SHORT NO LOAD
1548 SHUT UNIT DOWN
1645 STARTED UNIT NO LOAD. INTAKE AND DISCHARGE BAFFLES REMOVED. WALKDOWN WITH RALPH ADOLF VSE NOEL BUSHER. CHAMBER TEMP 125°F
1651 PLACED UNIT ON RATED LOAD
1700 BLEED TOP INTAKE BAFFLE
1708 UNIT SHUT SELF DOWN ON OVER TEMP
1712 STARTED UNIT ON NO LOAD IN BATTLE SHORT FOR COOL DOWN
1715 REMOVED BATTLE SHORT
1716 SHUT UNIT DOWN

9 Dec 1987

1135 ADDED ONE QUART OIL TO UNIT.
1334 START UNIT NO LOAD.
1335 PLACED UNIT ON RATED LOAD. UNIT OPERATING TO CHECK OVERTEMP PROBLEMS
1341 PLACED UNIT IN BATTLE SHORT
1355 SHUT UNIT DOWN. OIL LEAKING OUT FROM TOP OF DIP STICK
1413 STARTED UNIT TO MEASURE PRESSURE ON OIL DIP STICK TUBE. AT NO LOAD PRESSURE WAS 1.5 IN H_2O AT RATED LOAD PRESSURE WAS 3 PSI IN H_2O.
1430 SEALED TOP OF OIL DIP STICK WITH HIGH TEMP RTV WHERE T.C. PROBE ENTERS TO STOP OIL SEEPAGE
1447 START UNIT ON NO LOAD
1450 PLACED UNIT ON RATED LOAD SHUT UNIT DOWN. OIL BLOWING OUT OF DIP STICK TUBE

9 Dec 1987

REMOVED CRANKCASE BREATHER AND HOSE

10 Dec 1987

UPON EXAMINATION OF CRANKCASE BREATHER FILTER - FOUND EVIDENCE THAT FILTER WAS BEING PULLED HARD AGAINST OUTLET PORT AND SEALING OFF. OIL VAPOR WOULD THEN CLOG THIS SMALL AREA OF FILTER AND CAUSE CRANKCASE PRESSURE TO RISE
INFORM R. ADOLPH @ ± 0845

10 Dec 1987

DEFORMED CRANKCASE BREATHER FILTER SO IT WOULD NOT BLOCK OFF.
ADDED 1 QT OIL
STARTED UNIT - CRANKCASE NOW RUNNING NEGATIVE PRESSURE
NOTED REAR OF MUFFLER - DISTORTED INBOUND CIRCUMFERENCE @ RIGHT END BELL
1214 STARTED UNIT FOR CHECKOUT OF OVERHEATING PROBLEMS
UNIT CONFIGURATIONS:
DISCHARGE BAFFLE - REMOVED
INLET BAFFLE (BOTTOM) - REMOVED
INLET BAFFLE (TOP) - CLOSED
1225 PLACED UNIT ON R/L (TRYING TO OBTAIN 125°F CHAMBER TEMP.)
UNIT RUNNING IN BATTLE SHORT
1359 COOLANT OVER TEMP LIGHT ON - COOLANT OUT 213°F
1532 REMOVED TO NO LOAD.
1540 SHUT UNIT DOWN
1625 REVERSED THERMAL COUPLE ON OIL IN AND OUT LINES

1635 REPLACED COARSE INTAKE BAFFLES AND UNBLOCKED UPPER INTAKE.

11 DEC 1987

1008 STARTED UNIT - UNIT OPERATING IN BATTLE SHORT.

1012 PLACED UNIT ON RATED LOAD

1034 OVERTEMP LIGHT ON - COOLANT OUT TEMP 215°F

1045 SHUT UNIT DOWN COOLANT OUT TEMP 220°F

* NOTE: PRIOR TO TEST COOLANT IN AND COOLANT OUT THERMAL COUPLES WERE REPLACED. AFTER TEST THERMAL COUPLES FOR COOLANT IN AND OUT WERE CHECKED FOR CALIBRATION. BOTH THERMAL COUPLES WERE IN SPEC. REMOVED UNIT FROM CHAMBER.

21 DEC 1987

REMOVED OVERTEMP ~~ELECTRICAL~~ DETECTOR AND REPLACE WITH NEW ONE

REMOVED PULLEY AS PER RALPH ADOLPH USE TO REPLACE WITH ANOTHER NEW PULLEY .002 OFF IN DIAMETER SMALLER NEW SHAFT. SHAVING PULLEY BACK TO USE

22 Dec 1987.

430 KEED NEW PULLEY AFTER BEING BORED OUT BY FT. BELVOIR INSTALLED NEW PULLEY - BELTS TOO SHORT. REMOVED BELT OFF OF 30KW 400Hz SET. USED BELT OFF OF 30 KW AS PER R. ADOLPH

1100 COMPLETED

23 DEC 1987

0900 0915 PLACED UNIT IN CHAMBER. UPPER INTAKE BAFFLES BLOCKED, EXHAUST BAFFLES REMOVED AND HIGH SPEED PULLEY IN PLACE.

0945 START UNIT NO LOAD

0957 SHUT UNIT DOWN TO REWIRE ELECTRIC VOLTAGE AND AMMERAGE METERS.

1000 1004 START UNIT NO LOAD.

1004 1005 APPLIED RATED LOAD.

1005 1055 REMOVED UPPER INTAKE BAFFLE PLATE (UNBLOCKED)

1034 UNIT SHUT DOWN ON OVERTEMP LIGHT CAME ON WHEN TRYING TO RESTART

1043 STARTED UNIT IN BATTLE SHORT NO LOAD TO CHECK COOLANT HOSE TO SEE IF THEY WERE COLLAPSING. HOSES ARE NOT COLLAPSING. CONTINUING TO RUN UNIT IN BATTLE SHORT NO LOAD TO COOL DOWN ENGINE SO OVERTEMP WILL RESET.

1045 OVER TEMP ALARM RESET, UNIT STILL IN BATTLE SHORT.

1056 APPLIED RATED LOAD UNIT STILL IN BATTLE SHORT.

1114 OVERTEMP LIGHT ON - COOLANT OUT TEMP 213°F. CONTINUING TO RUN UNIT IN BATTLE SHORT.

1214 SHUT UNIT DOWN

1420 REPLACED DISCHARGE BAFFLES WITH CENTER SECTION REMOVED.

1430 START UNIT NO LOAD IN BATTLE SHORT

1431 APPLIED RATED LOAD

1448 OVERTEMP INDICATOR LIGHT ON AT 218°F COOLANT OUT. CONTINUING TO OPERATE UNIT IN BATTLE SHORT.

1511 SHUT UNIT DOWN COOLANT OUT TEMP 220°F.

23 Dec 1987

1600 Removed High Speed Pulley as per Ralph Adolph - USF

1630 Removed Water Pump from unit to be replaced with new as per Ralph Adolph - USF.

24 Dec. 1987

0830 Replaced original Pulley on unit

29 Dec. 1987

1400 Received new water pump and water coolant hose.

1430 Pitched new water pump and hose as per Ralph Adolph - USF.

1600 Started unit no load to ~~xxx~~ check unit for leaks. No leaks found

30 Dec 1987

0838 Started unit no load

0842 Applied Rated Load

0847 Unit shut self down - overtemp

0854 Start unit in Battle Short no load for cool down

0856 Took unit out of Battle Short

0858 Shut unit Down.

0932 Start unit in Battle Short Rated Load as per Ralph Adolph - USF

0954 Overtemp light indicator on Control Panel on.

1123 Removed Load from unit.

1125 Shut unit down

1312 Start unit Rated Load for instrument check.

1325 Unit shut self down on over temp

1456 Start unit Rated Load.

1515 Start stabilization for short term →

30 Dec 1987

6081.

* Note: Over temp switch jump out as per Ralph Adolph - USF

1611 Test aborted / instrument malfunction

1612 Shut unit down.

31 Dec. 1987

0838 Started unit no load. Overtemp switch still jumped out.

0848 Applied Rated Load.

0852 Start stabilization for 6081

1001 End of test shut unit down.

4 Jan. 1988

0900 Removed overtemp switch and replaced it with a thermocouple probe made a new gasket old one was leaking badly RCMA

1247 Started unit to stabilize for Rec. Range test 511.11 KCMA

1356 End of test RCM

1400 Started stabilizing for frequency adjustment range test method 511.26 RCM

1428 Abort test, engine out coolant temp = 218°F water jacket temp 224°F

1426 Shut unit down

1515 Started unit up to stabilize for frequency adjust 511.2,3.2 KCMA

1543 Shut unit down became too hot to run 220°F engine out 223°F sensor KCMA

1655 Started unit no load at 120°F in chamber as per Ralph Adolph of use KCMA

1601 Applied R/L to stabilize for frequency adjust 511.2.3.2

1630 Shut unit down - End of test

4 JAN 1988

1700 ZEROED PANEL INSTRUMENTS
1708 STARTED UNIT FOR INDICATING INSTRUMENT 513.2.3.1 NO LOAD KCM
1711 SHUT UNIT DOWN END OF TEST KCM

5 JAN. 1988

0721 STARTED UNIT R/L FOR LONG TERM 608.2 A1 KCM
120° AS PER RALPH ADOLPH
0810 ADJ. FREQ.
1738 END OF TEST SHUT UNIT DOWN

6 JAN. 1988

0730 ADDED ONE QUART OF OIL TO UNIT.
0755 SET UNIT UP FOR D.C. CONTROL TEST.
1104 STARTED UNIT USING ~~SLAVE BATTERIES~~
1105 SHUT UNIT DOWN TO REVERSE POLARITY
1106 ATTEMPTED REVERSE POLARITY ON BATTERIES, UNIT WOULD NOT START
1107 RESTARTED UNIT WITH PROPER POLARITY
1108 APPLIED RATED LOAD
1119 REMOVED SLAVE BATTERIES FROM UNIT, UNIT STILL RUNNING NO NOTICABLE CHANGES IN UNIT.
1139 TRIED TO ADJUST D.C VOLTAGE, UNABLE TO ADJUST FROM REAR OF ALTERNATOR.
1141 SHUT UNIT DOWN
1237 START UNIT FOR CIRCUIT INTERRUPTER TEST (SHORT CIRCUIT) METHOD 512.1
1241 APPLIED RATED LOAD
1327 SHUT UNIT DOWN END OF TEST
1349 START UNIT AT RATED LOAD FOR VOLTAGE DIP & RISE TEST METHOD 619.2. START STABILIZATION.
1436 END OF TEST SHUT UNIT DOWN

6 JAN, 1988

1512 END OF MUFFLER CLOSEST TO OPERATORS PANEL BUCKLING IN, AND BULGING OUT ALL THE WAY AROUND MUFFLER KLC

GASKET AROUND END OF GENERATOR (CLOSET TO REAR OF ENGINE) COMING OUT FROM UNDERNEATH OF GEN OUTER HOUSING KLC

1534 AN EXCESSIVE AMOUNT OF TIME HAD TO BE SPENT TO REMOVE THE LID OF THE THRM. RELAY BOX DUE TO RELOCATION OF THE BOX; ALSO THE ENTIRE UNIT HAD TO BE REMOVED K.C.M.

1649 STARTED UNIT FOR CIRCUIT INTERRUPTOR TEST (OVER VOLTAGE) METHOD 512.3

1654 SHUT UNIT DOWN TO CHANGE INSTRUMENTATION LEAD.

1653 RESTART UNIT FOR TEST

1702 END OF TEST K.C.M.

7 JAN 1988

1106 WENT TO HOOK UP LEADS FOR WINDING RESIST. HAD TO RUN WIRES UNDER LEFT DOOR CLOSEST TO OPERATORS PANEL SPACED DOOR BEST WAY POSSIBLE KLC

1432 STARTED GEN. SET GOING TO PERFORM HOT TEMP. WINDING RESISTANCE 710.1.3.2

1435 SHUT UNIT DOWN FOR INSTRUMENT CHECK.

1436 RESTART UNIT APPLIED RATED LOAD.

1530 HAD TO RESTABILIZE UNIT FOR ANOTHER ATTEMPT AT WINDING RESISTANCE

1645 END OF HOT WINDING RESISTANCE 710.1.3.2 K.C.M.

8 JAN, 1988

1030 PERFORMED AMBIENT WINDING RESISTANCE AND WHEN DONE DISASSEMBLED BOARD AND REMOVED SHORT CIRCUIT SWITCH AND GENERAL CLEANED UP K.C.M.

11 JAN. 1988

1137 START UNIT NO LOAD.
1150 SHUT UNIT DOWN.
1157 ADDED 3/4 OF A QUART OF OIL TO UNIT.
1153 START UNIT NO LOAD.
1510 APPLIED R/L STARTED STABILIZATION FOR METHOD 5.2.2C
2035 END OF TEST SHUT UNIT DOWN

12 JAN. 1988

0950 START UNIT NO LOAD ~~FOR~~ OVER TEMP ADJUSTIVE DEVICE TO
0951 APPLIED RATED LOAD
0956 BLOCK UNIT COOLING AIR
1010 UNIT SHUT DOWN ON OVERTEMP. COOLANT OUT TEMP 219°F.
1012 START UNIT IN BATTLE SHORT FOR COOL DOWN.
1017 REMOVED BATTLE SHORT - SHUT UNIT DOWN END OF TEST
1052 START UNIT NO LOAD
1105 APPLIED RATED LOAD START STABILIZATION FOR MAX POWER TEST METHOD 6K.1
1141 COMPLETED STABILIZATION APPLIED 125% RESISTIVE LOAD.
1152 REDUCED UNIT TO NO LOAD FOR COOL DOWN.
1154 END OF TEST SHUT UNIT DOWN

4 FEB. 1988

0830 REMOVED BATTERIES FOR CHARGE CYCLE TO GET READY FOR COLD TEST

9 FEB 1988

0930 REMOVED CENTER BAFFLES ON INLET BAFFLE TO GET TO END OF GEM REMOVED BOLT FROM END OF GEM TO PUT ADAPTER IN FOR TOP GUN

10 FEB 1988

0830 RECEIVED FWD. IRE BAFFLE HOUSING FROM INSPECTION SIDE OF GIMBAL SET. HOOKED UP TOR. GRAPH TO GIMBAL SET

1100 POT GIMBAL OUTSIDE TO CHECK SET UP OUT

1315 START UNIT NO LOAD TO CHECK TEST SET-UP

1405 SHUT UNIT DOWN.

11 FEB 1988

0830 MOUNTED UNIT INTO TEMP CHAMBER TO SET UP FOR TORSIOGRAPH TEST.

1300 STARTED TORSIOGRAPH TEST (TRIAL RUN)

1437 TEST COMPLETED. SHUT UNIT DOWN

E-11

(MAXIMUM NOISE LEVEL ___ dBA)

TEST ITEM: 60KW 16 OHZ GEN. SET S/N: DZO 2755 HOUR METER: 11.6

CONFIGURATION ___ UNMODIFIED ✓ MODIFIED

TEMPERATURE: 42 °F HUMIDITY: 92% TEST SITE: HARTWOOD

SURFACE: GRASS TERRAIN: ___

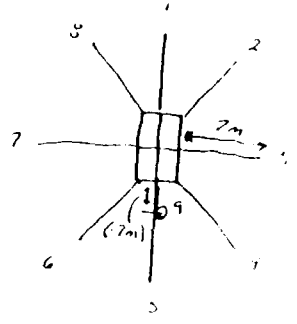
BAROMETRIC PRESSURE: 29.984 SKY COVER: CLEAR

WIND DIRECTION: N/A WIND VELOCITY: N/A MICROPHONE: GR 1962

SOUND LEVEL METER: GR1982 OCTAVE ANALYZER: ___

LOAD CONDITION: ___ RATED ✓ NO LOAD MICROPHONE LOCATION: AS BELOW

DATE	TIME	MICROPHONE POSITION	DISTANCE ~~FT~~ (M)	DBA	REMARKS
11-20-87	0837	1	7m	68	K. MALLEY G. CARTER
		2	7m	68	
		3	7m	68	
		4	7m	67	
		5	7m	68	
		6	7m	69.7	
		7	7m	67	
		8	7m	67	
11-20-87	0943	9	0.7m	87	RESONANCE SOUND AND VIBRATION THROUGH SET WORSE AT OPERATOR'S PANEL



E-12

TEST ITEM: 60KW, 6 GEN SET S/N: D20 2785 HOUR METER: 11.7

TEMPERATURE: 42°C HUMIDITY: 42% CONFIGURATION ___ UNMODIFIED ✓ MODIFIED

SURFACE: GRASS TERRAIN: TEST SITE: ARTILLERY

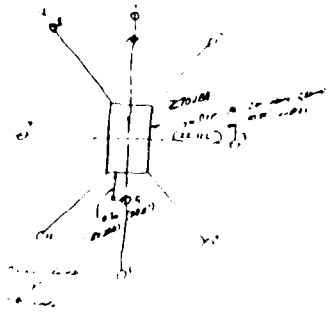
BAROMETRIC PRESSURE: 29.884 SKY COVER: CLEAR

WIND DIRECTION: NA WIND VELOCITY: NA MICROPHONE: GR1962

SOUND LEVEL METER: GR1982 OCTAVE ANALYZER: ___

LOAD CONDITION: ✓ RATED ___ NO LOAD MICROPHONE LOCATION: AS BELOW

DATE	TIME	MICROPHONE POSITION	DISTANCE ~~FT~~ (M)	DBA	REMARKS
11-20-87	0943	1	7m	72	K. MALLOY G. CARLTON
		2	7m	68.7	
		3	7m	70.1	
		4	7m	70.3	
		5	7m	70.3	
		6	7m	71.5	
		7	7m	69.5	
		8	7m	71.2	
11-20-87	0845	9	.7m	88.8	RESONANCE SOUND AND VIBRATION THROUGH SET WHILE AT OPERATOR'S PANEL



TEST ITEM: 60Hz/60Hz GEN SET S/N: DZO 2785 HOUR METER: 20.1

CONFIGURATION: ___ UNMODIFIED ✓ MODIFIED

TEMPERATURE: 42°F HUMIDITY: 92% TEST SITE: HARTWOOD

SURFACE: GLASS TERRAIN: —

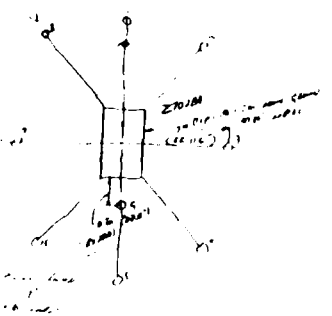
BAROMETRIC PRESSURE: 29.884 SKY COVER: CLEAR

WIND DIRECTION: NA WIND VELOCITY: N/A MICROPHONE: GR 1962

SOUND LEVEL METER: GR 1982 OCTAVE ANALYZER: —

LOAD CONDITION: ✓ RATED ___ NO LOAD MICROPHONE LOCATION: AS BELOW

DATE	TIME	MICROPHONE POSITION	DISTANCE FT(M)	DBA	REMARKS
11-20-87	0845	1	7m	71.9	RETEST BY D. JAGGERS
		2	7m	69.4	NOT KNOWING LOCATIONS
		3	7m	69.9	OF FAILURES. I TOOK
		4	7m	69.3	ANOTHER SET OF READINGS
		5	7m	71.7	FOR COMPARISON
		6	7m	69.7	
		7	7m	68.7	
		8	7m	70.9	
11-20-87	0850	9	0.7m	87.0	TEST



B-11

ACOUSTICAL TEST DATA, ONTOS (MAXIMUM NOISE LEVEL ___ DBA)

TEST ITEM: GEN SET (50Hz, ~~60Hz~~) S/N: DZ 2785 HOUR METER: 11.8

CONFIGURATION ___ UNMODIFIED ✓ MODIFIED

TEMPERATURE: 42°F HUMIDITY: 92% TEST SITE: HARTFORD

SURFACE: GRASS TERRAIN: ___

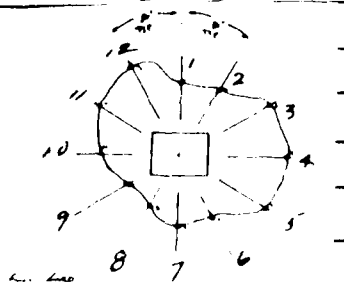
BAROMETRIC PRESSURE: 29.884 SKY COVER: CLEAR

WIND DIRECTION: NA WIND VELOCITY: NA MICROPHONE: GR 1962

SOUND LEVEL METER: GR 1962 OCTAVE ANALYZER: ___

LOAD CONDITION: ✓ RATED ___ NO LOAD MICROPHONE LOCATION: AS BELOW

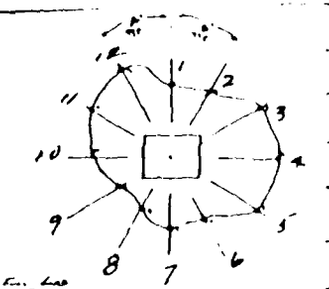
DATE	TIME	MICROPHONE POSITION	DISTANCE FT(M)	DBA	REMARKS
11 Dec 87	0954	1	7'6"	85	K. MALLOY G. CARLSON
		2	6'2"	85	
		3	2'9"	85	
		4	1'10"	85	
		5	4'8"	85	
		6	3'7"	85	
		7	7'5"	85	
		8	3'11"	85	
		9	1'11"	85	
		10	1'11½"	85	POSITION 1. OPERATOR'S END
		11	4'0"	85	
12 Dec 87	0902	12	4'24"	85	



ACOUSTICAL DATA UNIT ____ DBA
(MAXIMUM NOISE LEVEL ____ DBA)

TEST ITEM: 60 KW/60 HZ GEN SET S/N: DZO 2785 HOUR METER: 12.0
CONFIGURATION ___ UNMODIFIED ✓ MODIFIED
TEMPERATURE: 42°F HUMIDITY: 92% TEST SITE: HARTWOOD
SURFACE: GRASS TERRAIN: ____
BAROMETRIC PRESSURE: 29.884 SKY COVER: CLEAR
WIND DIRECTION: NA WIND VELOCITY: NA MICROPHONE: GR 1962
SOUND LEVEL METER: GR 1952 OCTAVE ANALYZER: ____
LOAD CONDITION: ___ RATED ✓ NO LOAD MICROPHONE LOCATION: AS BELOW

DATE	TIME	MICROPHONE POSITION	DISTANCE ~~FT~~ FT(M)	DBA	REMARKS
1-22-87	0902	1	6' 4"	85	K. MALLEY G. CARTER
		2	0	82.7	
		3	1' 10"	85	
		4	1' 5"	85	
		5	1' 6"	85	
		6	3' 6"	GLC ~~85~~ 82.7	
		7	5' 6"	85	
		8	0	84.2	
		9	1' 10"	85	POSITION #1 LOCATED AT OPERATOR
		10	1' 8"	85	END
		11	2' 0"	85	
1-22-87	0911	12	3' 9"	84.1	



ACOUSTICAL TEST DATA

TIME: 1435	DATE: 12-2-87				
TEST ITEM: 60KW 60HZ GEN SET	STATION: NO LOAD	TEST CONDUCTED BY: BW KM	TEST ITEM OPERATOR		
RFG/MODEL NO: MEP006A	SERIAL NO: DZ02785	ODOMETER:	HOUR METER: 1610	TEST ITEM CONDITION: MODIFIED	
TEMPERATURE: 46°F	HUMIDITY: 45%	TEST SITE: HARTWOOD	SURFACE: GRASS	SEA STATE:	TERRAIN:
BAROMETRIC PRESSURE: 29.489 "Hg	SKY COVER: OVERCAST	STATIONARY OPERATION: ☒	HIGHWAY DRIVING: ☐	DRIVE BY: ☐	
WIND DIRECTION: NW	WIND VELOCITY: <5mph	MICROPHONE: GR 1962	SOUND LEVEL METER: GR 1982	OCTAVE ANALYZER	
INTERIOR: ☐	EXTERIOR: ☒	MICROPHONE LOCATION:	TAPE RECORDER:	TAPE NO:	

POSITION	DISTANCE	dbA	dbB	dbC	ALL PASS	36.5	63	125	250	500	1,000	2.000	4000	8000	REMARKS
#1	7m	68.0	75.6	78.4	74.4	65.9	66.8	75.3	74.6	64.3	55.3	50.7	44.4	49.8	POSITION 1 IS DISCHARGE
#2	7m	67.1	74.3	78.4	79.2	69.3	69.9	74.1	72.0	65.0	58.0	55.8	48.8	48.7	END - MOVING CLOCKWISE
#3	7m	68.1	76.3	80.8	86.2	74.2	72.1	76.6	75.3	64.1	55.4	53.9	45.8	44.2	POSITION 9 IS OPERATOR'S
#4	7m	67.1	74.3	77.6	78.4	69.8	69.5	73.9	72.3	64.8	57.5	54.2	47.2	43.2	PANEL
#5	7m	65.4	73.4	76.2	77.1	62.8	66.1	72.5	72.4	63.2	58.2	54.3	44.6	44.2	OPERATING WITH
#6	7m	69.2	78.6	80.5	81.0	70.1	69.2	76.6	76.4	64.9	56.9	54.1	48.5	44.0	UPPER INLET BAFFLE
#7	7m	66.0	73.2	77.5	78.7	72.6	70.5	75.2	69.2	64.5	57.0	57.4	47.1	44.3	BLOCKED
#8	7m	76.3	80.4	83.0	83.5	69.2	67.3	78.5	79.0	62.4	57.8	55.0	49.0	47.3	
#9	0.7m	80.1	87.5	90.6	91.0	74.5	70.4	86.2	84.5	76.4	69.4	66.2	66.5	57.5	

G-17-8

ACOUSTICAL TEST DATA

TIME: 1444	DATE: 12-2-81				
TEST ITEM: 60KW 60HZ GEN SET	STATION: RATED LOAD	TEST CONDUCTED BY: BJ KM	TEST ITEM OPERATOR		
RFG/MODEL NO: MEP006A	SERIAL NO: DZ02785	ODOMETER:	HOUR METER: 16.2	TEST ITEM CONDITION: WIDE OPEN	
TEMPERATURE: 46 °F	HUMIDITY: 45%	TEST SITE: HARTWOOD	SURFACE: GRASS	SEA STATE:	TERRAIN:
BAROMETRIC PRESSURE: 29.489" HG	SKY COVER: OVERCAST	STATIONARY OPERATION: [X]	HIGHWAY DRIVING: [ ]	DRIVE BY: [ ]	
WIND DIRECTION: NW	WIND VELOCITY: < 5MPH	MICROPHONE: GR 1962	SOUND LEVEL METER: GR 1982	OCTAVE ANALYZER	
INTERIOR: [ ]	EXTERIOR: [X]	MICROPHONE LOCATION:	TAPE RECORDER:	TAPE NO:	

	dbA	dbB	dbC	ALL PASS	36.5	63	125	250	500	1,000	2.000	4000	8000	REMARKS
A 1	69.7	77.4	82.0	82.8	66.1	70.6	76.3	76.2	65.0	57.8	50.3	44.4	42.8	POSITION 1 IS EXCHANGE
# 2	69.0	76.2	79.9	80.6	76.2	74.9	76.1	73.3	64.9	59.9	59.2	53.3	50.5	END - MOVING CLOCKWISE
# 3	70.2	79.8	43.2	83.9	76.0	76.6	80.5	75.8	66.8	58.7	59.2	51.5	49.1	POSITION 9 IS OPERATOR'S
# 4	69.3	76.8	81.4	83.3	71.3	72.2	76.8	74.6	65.1	60.4	58.6	51.5	49.3	PANEL
# 5	68.2	75.6	79.0	79.7	64.6	69.2	75.4	75.6	63.8	56.6	54.4	49.1	48.7	OPERATING WHEEL
# 6	72.3 ↓ [redacted]	79.7	42.8	83.3	71.9	75.2	80.8	79.4	66.0	58.7	58.9	53.0	47.6	UPPER INLET BAFFLE
# 7	71.0	79.6	83.6	84.3	73.9	76.3	81.0	76.4	64.3	59.2	62.6	51.9	47.7	BLOCKED
# 8	72.7	81.6	84.5	84.4	66.8	71.4	81.3	80.7	65.1	59.9	59.3	53.1	50.0	
# 9	84.5	88.5	92.3	92.5	77.3	83.5	89.0	87.5	76.8	70.9	72.1	66.2	62.2	

21-8

ACOUSTICAL TEST DATA

TIME: 1555	DATE: 12-2-87				
TEST ITEM: 60 KW 60Hz GEN SET	STATION: NO LOAD	TEST CONDUCTED BY: BJ KM	TEST ITEM OPERATOR		
RFG/MODEL NO: MEP 006A	SERIAL NO: DZO 2785	ODOMETER:	HOUR METER: 161.7	TEST ITEM CONDITION: MODIFIED	
TEMPERATURE: 45°F	HUMIDITY: 58%	TEST SITE: HARDSTAND	SURFACE: GRASS	SEA STATE:	TERRAIN:
BAROMETRIC PRESSURE: 29.349 "HG	SKY COVER: OVERCAST	STATIONARY OPERATION: [X]	HIGHWAY DRIVING: [ ]	DRIVE BY: [ ]	
WIND DIRECTION: N	WIND VELOCITY: < 10 mph	MICROPHONE: GR 1962	SOUND LEVEL METER: GR 1982	OCTAVE ANALYZER	
INTERIOR: [ ]	EXTERIOR: [X]	MICROPHONE LOCATION:	TAPE RECORDER:	TAPE NO	

POSITION	DISTANCE	dbA	dbB	dbC	ALL PASS	31.5	63	125	250	500	1,000	2.000	4000	8000	REMARKS
#8	7-m	73.7	81.8	84.3	85.2	66.3	69.7	80.9	81.4	64.3	61.4	56.7	50.8	50.1	DISCHARGE SIDE 45° LEFT
#1	7-m	71.1	79.5	82.3	82.5	67.3	69.8	79.3	78.3	63.7	57.2	56.5	51.6	43.2	DISCHARGE CENTER
#2	7-m	71.6	79.6	82.4	82.9	73.9	71.6	79.2	79.0	66.7	62.6	58.3	52.3	53.2	DISCHARGE 45° RIGHT
															INLET BAFFLE OPEN
															CENTER SECTION OF
															DISCHARGE BAFFLE
															REMOVED

6-8

ACOUSTICAL TEST DATA

TIME: 1600	DATE: 12-2-87				
TEST ITEM: 60KW 60HZ GEN SET	STATION: RATED LOAD	TEST CONDUCTED BY: BW KM	TEST ITEM OPERATOR		
RFG/MODEL NO: MEP 006A	SERIAL NO: DZO 2785	ODOMETER:	HOUR METER: 16.8	TEST ITEM CONDITION: MODIFIED	
TEMPERATURE: 45 °F	HUMIDITY: 58%	TEST SITE: HARTWOOD	SURFACE: GRASS	SEA STATE:	TERRAIN:
BAROMETRIC PRESSURE: 29.349" HG	SKY COVER: OVERCAST	STATIONARY OPERATION: [X]	HIGHWAY DRIVING: [ ]	DRIVE BY: [ ]	
WIND DIRECTION: W	WIND VELOCITY: < 10 mph	MICROPHONE: GR 1962	SOUND LEVEL METER: GR 1982	OCTAVE ANALYZER:	
INTERIOR: [ ]	EXTERIOR: [X]	MICROPHONE LOCATION:	TAPE RECORDER:	TAPE NO:	

POSITION	DISTANCE	dbA	dbB	dbC	ALL PASS	31.5	63	125	250	500	1,000	2,000	4000	8000	REMARKS
#8	7m	74.5	83.4	86.7	86.0	67.4	71.4	82.3	82.5	66.1	62.6	61.8	56.3	52.8	DISCHARGE SIDE 45° LEFT
#1	7m	72.5	81.4	84.3	84.0	62.3	72.9	80.2	79.8	62.6	56.3	52.7	53.7	45.3	DISCHARGE CENTER
#2	7m	72.4	79.9	83.3	84.2	73.3	75.8	79.9	78.2	66.9	63.2	62.5	56.3	54.4	DISCHARGE 45° RIGHT
															INLET BAFFLES OPEN
															CENTER SECTION OF
															DISCHARGE BAFFLE
															REMOVED.

J7-8

ACOUSTICAL TEST DATA

TIME:	DATE:
0830	12-3-87

TEST ITEM:	STATION:	TEST CONDUCTED BY:	TEST ITEM OPERATOR
60 KW / 60 HZ GEN SET		BJ / KM	

RFG/MODEL NO:	SERIAL NO:	ODOMETER:	HOUR METER:	TEST ITEM CONDITION:
MEP 006A	D20 2785	—	14.8	MODIFIED NO LOAD

TEMPERATURE:	HUMIDITY:	TEST SITE:	SURFACE:	SEA STATE:	TERRAIN:
30°F	30%	HAGERTOWN	GRASS		

BAROMETRIC PRESSURE:	SKY COVER:	STATIONARY OPERATION:	HIGHWAY DRIVING:	DRIVE BY
29.63	OVERCAST	☒	☐	☐

WIND DIRECTION:	WIND VELOCITY:	MICROPHONE:	SOUND LEVEL METER:	OCTAVE ANALYZER
N/A	N/A	GR 1962	GR 1982	

INTERIOR:	EXTERIOR:	MICROPHONE LOCATION:	TAPE RECORDER:	TAPE NO
☐	☒			

POSITION	DISTANCE	dbA	dbB	dbC	ALL PASS	~~36.5~~ 31.5	63	125	250	500	1,000	2,000	4000	8000	REMARKS
1	7m	69.2	77.4	81.2	85.3	64.6	65.1	77.4	76.3	66.2	54.4	51.0	46.4	47.2	POSITION #1
2	7m	64.1	77.7	80.4	81.0	67.0	70.6	77.3	75.7	55.2	58.2	55.0	49.4	49.2	LOCATED AT DISCHARGE
3	7m	68.5	77.8	81.3	82.1	73.7	73.2	78.1	75.8	64.0	55.2	54.8	45.8	44.6	END MOVING CLOCKWISE
4	7m	67.5	75.3	78.8	79.2	70.2	70.6	75.3	73.2	65.0	57.3	54.4	47.2	44.4	POSITION #9 IS AT
5	7m	67.5	75.4	78.3	79.0	61.8	68.7	75.0	73.9	65.1	56.4	53.6	45.3	45.6	CONTROL PANEL
6	7m	71.0	79.6	82.7	83.0	69.1	70.2	79.3	77.9	66.0	56.8	54.4	49.5	44.8	UPPER INTAKE
7	7m	66.8	75.1	79.0	80.1	72.9	71.8	71.5	72.4	64.8	56.5	57.2	47.7	44.7	BATTLE OPEN
8	7m	71.3	80.5	82.9	83.6	67.5	68.7	79.6	79.9	62.2	57.1	54.9	49.4	47.4	
9	0.7m	84.2	92.1	94.6	95.2	76.9 ~~95.2~~	79.1	90.3	91.4	80.5	70.4	66.0	61.2	60.0	

E-21

ACOUSTICAL TEST DATA

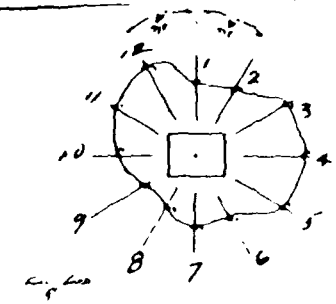
TIME: 0915	DATE: 12-3-87				
TEST ITEM: 60 KW / 60 HZ GEN. SET	STATION:	TEST CONDUCTED BY: BJ / KM	TEST ITEM OPERATOR		
RFG/MODEL NO: MEP 006A	SERIAL NO: D20 2785	ODOMETER:	HOUR METER: 15.3	TEST ITEM CONDITION: MODIFIED	RATED (KW)
TEMPERATURE: 30 °F	HUMIDITY: 30 %	TEST SITE: HARTWOOD	SURFACE: GRASS	SEA STATE: N/A	TERRAIN:
BAROMETRIC PRESSURE: 29.683	SKY COVER: OVERCAST	STATIONARY OPERATION: ☒	HIGHWAY DRIVING: ☐	DRIVE BY: ☐	
WIND DIRECTION: NA	WIND VELOCITY: NA	MICROPHONE: GR 1962	SOUND LEVEL METER: GR 1982	OCTAVE ANALYZER	
INTERIOR: ☐	EXTERIOR: ☒	MICROPHONE LOCATION:	TAPE RECORDER:	TAPE NO	

POSITION	DISTANCE	dbA	dbB	dbC	ALL PASS	~~36.8~~ 31.5	63	125	250	500	1,000	2,000	4000	8000	REMARKS
1	7m	70.3	78.4	88.9	89.5	71.4 BGL	71.6	78.5	78.2	62.7	57.2	55.4	50.3	47.2	POSITION #1 IS
2	7m	70.4	78.2	82.2	82.5	72.0	75.6	78.3	76.2	66.0	60.2	59.7	53.1	51.5	LOCATED AT DISCHARGE
3	7m	71.2	79.5	83.8	84.7	77.2	77.6	80.7	77.7	66.8	58.6	59.0	51.7	49.4	END MOVING CLOCKWISE.
4	7m	68.6	75.9	80.0	80.5	72.3	74.0	75.2	74.0	65.4	60.1	58.6	51.5	48.4	POSITION #5 IS AT
5	7m	68.4	75.7	79.2	79.5	64.4	69.1	75.8	75.0	64.8	57.5	54.4	48.1	49.7	OPERATOR CONTROL PANEL.
6	7m	73.4	82.4	85.5	85.3	72.2	74.4	81.4	81.6	66.0	58.8	59.4	53.6	48.4	UPPER INTAKE
7	7m	71.4	79.7	84.0	84.7	75.0	77.1	81.3	77.2	67.0	59.5	63.1	52.5	48.7	BAFFLE OPEN
8	7m	73.2	82.6	85.3	85.0	62.3	71.9	81.4	81.5	64.4	59.6	59.9	53.5	50.7	
9	0.7m	85.2	93.9	96.5	96.6	79.2	83.6	92.6	93.0	79.2	71.4	71.0	65.4	63.7	

"CANISTER" [illegible] (MAXIMUM NOISE LEVEL ____ dBA)

TEST ITEM: 60 KW 60 HZ GEN SET S/N: DZO 2785 HOUR METER: 167
CONFIGURATION ___ UNMODIFIED ✓ MODIFIED
TEMPERATURE: 38 F HUMIDITY: 30% TEST SITE: HARTWOOD
SURFACE: GRASS TERRAIN: ____
BAROMETRIC PRESSURE: 29.643 IN Hg SKY COVER: OVERCAST
WIND DIRECTION: NO WIND WIND VELOCITY: NONE MICROPHONE: 1962
SOUND LEVEL METER: 1942 OCTAVE ANALYZER: ____
LOAD CONDITION: ✓ RATED ___ NO LOAD MICROPHONE LOCATION: AS BELOW

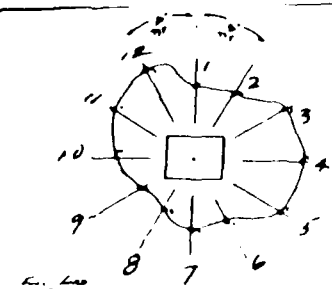
DATE	TIME	MICROPHONE POSITION	DISTANCE FEET (M)	DBA	REMARKS
12-3-87	0948	1	6.3"	85	
		2	4.0	85	
		3	2.3	85	
		4	2.9	85	
		5	3.4	85	
		6	2.1	85	
		7	2.10	85	
		8	3.11	85	
		9	2.4	85	
		10	2.8	85	
		11	3.0	85	
		12	4.0	85	
12-3-87	0952				



"CRITICAL" EXHAUST, CONFIGURATION LEVEL
(MAXIMUM NOISE LEVEL ____ dBA)

TEST ITEM: 60 KW 60 HZ GEN SET S/N: DZO 2785 HOUR METER: 15.9
CONFIGURATION ___ UNMODIFIED ✓ MODIFIED
TEMPERATURE: 30°F HUMIDITY: 30% TEST SITE: HURLWOOD
SURFACE: GRASS TERRAIN: ____
BAROMETRIC PRESSURE: 29.683 INHG SKY COVER: OVERCAST
WIND DIRECTION: NO WIND WIND VELOCITY: NO WIND MICROPHONE: 1982
SOUND LEVEL METER: 1982 OCTAVE ANALYZER: ____
LOAD CONDITION: ___ RATED ✓ NO LOAD MICROPHONE LOCATION: AS BELOW

DATE	TIME	MICROPHONE POSITION	DISTANCE FT(M)	DBA	REMARKS
12-3-87	0952	1	5.3	85	
		2	5.3	85	
		3	0	93.7	
		4	2.1	85	
		5	2.3	85	
		6	0	82.2	
		7	7.6	85	
		8	0	82.4	
		9	0	84.2	
		10	2.6	85	
		11	2.0	85	
12-3-87	0955	12	0	84.1	



TEST DATA

ITEM 60 Hz / 60 KW GENERATOR SET MODIFIED
MFGR. KURTZ & ROOT
MODEL NO. MEP 006 A
SERIAL NO. DZ0 2785

NTS
National Technical Systems
Scientific Services Group
Testing Division
PO Box 38
Hartwood, Virginia 22471
Tel 703 752 5300

REGULATOR RANGE TEST

REF. NO. MIL-STD 705; 511.1
SHEET 1 OF 1
DATE 4 JAN 1988
JOB NO. 555-2140
PROJ. ENGR.
RECORDER/OBSERVER K.G.M.F / B.J.

INST TIME	STEP NO.	LOAD STEP	EG028D VOLTAGE L_1-L_0 VAC	L_2-L_0 VAC	L_3-L_0 VAC	EG0400 AMPERES x80 L_1-L_0 AC AMPS	L_2-L_0 AC AMPS	L_3-L_0 AC AMPS	EG2300 KILOWATTS x80 L_1-L_0 Kw	L_2-L_0 Kw	L_3-L_0 Kw	EG2420 POWER FACTOR PF	EG1410 FREQ. Hz	EG1620 EXCITER VOLTS VDC	EG2480 FIELD AMPS DCA	AMB. TEMP. °F	
1247	R/L	STARTED UNIT TO STABILIZE FOR REGULATOR RANGE TEST															
1256		R/L	208	207	207	2.52	2.54	2.54	.249	.249	.25	.80	60	12.4	2.25	126°	15.5/15.2
1306		R/L	207	207	207	2.53	2.54	2.55	.249	.250	.25	.80	59.9	12.4	3.25	127	15.4/15.8
1316		R/L	207	207	207	2.54	2.55	2.55	.249	.250	.25	.80	59.6	13.5	3.4	125	15.3/15.7
1326		R/L	207	208	208	2.54	2.54	2.55	.249	.25	.251	.80	59.7	13.6	3.4	125	15.3/15.2
1336		R/L	208	208	208	2.54	2.55	2.55	.249	.25	.25	.80	59.7	13.8	3.45	126	15.3/15.8
1338		R/L	210	210	210	?							60.4			125	30/7.5
1340	240V	N/L	240	240	240								60.2				28/6.8
		R/L	238	238	238	2.2	2.21	2.21	.249	.25	.251	.80	59.6	14.7	3.7	119	15/14.8
1345	250V	N/L	253	252	252								60.2			124	29/7.2
1347		R/L	252	252	252	2.15	2.2	2.15	.249	.25	.251	.80	55.5	16.5	4.2	127	15.0/15.2
1352		R/L	197	197	197	2.65	2.65	2.66	.248	.248	.25	.80	58.6	12.5	3.4	129	15.5/15.2
1354		N/L	199	199	199								60.4			126	3.6/3.4
1355		N/L	163	163	163								60.2			126	2.5/2.0
1356		END OF TEST															

NOTES:

TEST DATA

TEST 60 Hz, 60 KW Generator Set Modified

MFGR. Kurz & Root

MODEL NO. MEP 006A

SERIAL NO. DZO 2785

NTS — National Technical Systems — Scientific Services Group — Testing Division — PO Box 38 — Hollywood, Virginia 22471 — Tel: 703 752 5300

Regulator Range Computation Sheet

REF. NO. Mil Std 705, 511.1

SHEET 1 OF 1

DATE 19 Jan 1988

JOB NO. 555-2140

PROJ. ENGR.

RECORDER/OBSERVER

INST. →								
		VOLTAGE				VOLTS		REG.
TIME	LOAD	L1 - L2	L2 - L3	L3 - L1		AVERAGE		PERCENT
1336	R/L	208	208	208		208		
	N/L	210	210	210		210		0.962
	N/L	240	240	240		240		
	R/L	238	238	238		238		0.840
	N/L	253	252	253		252.67		
	R/L	252	252	252		252		0.266
	R/L	197	197	197		197		
	N/L	199	199	199		199		1.02
1355	N/L	163	163	163		163		

Where percent of regulation is defined as:

$$\frac{V_{NL\ avg.} - V_{RL\ avg.}}{V_{RL\ avg.}} \times 100$$

NOTES:

Regulator Range Test, Method 5.1.

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BEGIN SCAN GROUP 1    04 JAN 88  12:45:33
60 KW 60HZ GEN SET S/N DZO 2785

C    1 EXHAUST 1          75.752 DEG. F
C    2 EXHAUST 2          74.820 DEG. F
C    3 EXHAUST 3          74.044 DEG. F
C    4 EXHAUST 4          73.968 DEG. F
C    5 EXHAUST 5          74.950 DEG. F
C    6 EXHAUST 6          74.456 DEG. F
C    7 ENG. COOL. IN      78.678 DEG. F
C    8 ENG. COOL. OUT     87.461 DEG. F
C    9 OIL SUMP           69.349 DEG. F
C   10 WATER TEMP/HEAD    70.202 DEG. F
C   11 OIL COOLER IN      78.339 DEG. F
C   12 OIL COOLER OUT     74.734 DEG. F
C   13  ENG. INTAKE       79.904 DEG. F
C   14 RAD. TOP LEFT      106.05 DEG. F
C   15 RAD. BTTM LEFT     96.676 DEG. F
C   16 RAD. TOP RIGHT     101.10 DEG. F
C   17 RAD. BTTM RIGHT    87.056 DEG. F
C   18 GEN. AIR IN        76.797 DEG. F
C   19 GEN. AIR OUT       78.801 DEG. F
C   20 GEN. FRAME TOP     72.158 DEG. F
C   21 GEN. FRAME BTTM    70.937 DEG. F
C   22 GEN. EXCITER       80.018 DEG. F
C   23 GEN. VOLT. REG.    85.104 DEG. F
C   24 CONTROL PANEL      85.382 DEG. F
C   25 RELAY AREA         92.013 DEG. F
C   26 BATTERY LEFT       76.728 DEG. F
C   27 BATTERY RIGHT      76.653 DEG. F
C   28 AIR IN SET         107.67 DEG. F
C   29 FUEL TANK          68.838 DEG. F
C   30 FUEL OUTLET        85.766 DEG. F

END SCAN GROUP 1      04 JAN 88  12:45:44

STOPPED SINGLE SCAN   04 JAN 88  12:45:44
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BEGIN SCAN GROUP 1    04 JAN 88  13:06:
60 KW 60HZ GEN SET S/N DZO 2785

C    1 EXHAUST 1          1108.6 DEG. F
C    2 EXHAUST 2          1105.4 DEG. F
C    3 EXHAUST 3          1138.2 DEG. F
C    4 EXHAUST 4          1164.0 DEG. F
C    5 EXHAUST 5          1154.6 DEG. F
C    6 EXHAUST 6          1106.5 DEG. F
C    7 ENG. COOL. IN      194.30 DEG. F
C    8 ENG. COOL. OUT     209.69 DEG. F
C    9 OIL SUMP           223.02 DEG. F
C   10 WATER TEMP/HEAD    215.42 DEG. F
C   11 OIL COOLER IN      229.38 DEG. F
C   12 OIL COOLER OUT     215.13 DEG. F
C   13  ENG. INTAKE       238.57 DEG. F
C   14 RAD. TOP LEFT      152.24 DEG. F
C   15 RAD. BTTM LEFT     142.70 DEG. F
C   16 RAD. TOP RIGHT     136.61 DEG. F
C   17 RAD. BTTM RIGHT    143.17 DEG. F
C   18 GEN. AIR IN        120.10 DEG. F
C   19 GEN. AIR OUT       126.44 DEG. F
C   20 GEN. FRAME TOP     120.89 DEG. F
C   21 GEN. FRAME BTTM    114.86 DEG. F
C   22 GEN. EXCITER       130.26 DEG. F
C   23 GEN. VOLT. REG.    116.81 DEG. F
C   24 CONTROL PANEL      115.60 DEG. F
C   25 RELAY AREA         127.49 DEG. F
C   26 BATTERY LEFT       141.97 DEG. F
C   27 BATTERY RIGHT      143.88 DEG. F
C   28 AIR IN SET         127.10 DEG. F
C   29 FUEL TANK          82.830 DEG. F
C   30 FUEL OUTLET        120.50 DEG. F

END SCAN GROUP 1      04 JAN 88  13:06:

STOPPED SINGLE SCAN   04 JAN 88  13:06:
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BEGIN SCAN GROUP 1    04 JAN 88  12:55:58
60 KW 60HZ GEN SET S/N DZO 2785

C    1 EXHAUST 1          1094.3 DEG. F
C    2 EXHAUST 2          1090.0 DEG. F
C    3 EXHAUST 3          1122.2 DEG. F
C    4 EXHAUST 4          1152.2 DEG. F
C    5 EXHAUST 5          1134.0 DEG. F
C    6 EXHAUST 6          1093.4 DEG. F
C    7 ENG. COOL. IN      183.10 DEG. F
C    8 ENG. COOL. OUT     196.63 DEG. F
C    9 OIL SUMP           192.55 DEG. F
C   10 WATER TEMP/HEAD    200.98 DEG. F
C   11 OIL COOLER IN      199.87 DEG. F
C   12 OIL COOLER OUT     191.89 DEG. F
C   13  ENG. INTAKE       230.78 DEG. F
C   14 RAD. TOP LEFT      144.45 DEG. F
C   15 RAD. BTTM LEFT     138.93 DEG. F
C   16 RAD. TOP RIGHT     131.32 DEG. F
C   17 RAD. BTTM RIGHT    137.29 DEG. F
C   18 GEN. AIR IN        124.32 DEG. F
C   19 GEN. AIR OUT       117.08 DEG. F
C   20 GEN. FRAME TOP     109.42 DEG. F
C   21 GEN. FRAME BTTM    105.69 DEG. F
C   22 GEN. EXCITER       119.57 DEG. F
C   23 GEN. VOLT. REG.    103.81 DEG. F
C   24 CONTROL PANEL      104.36 DEG. F
C   25 RELAY AREA         122.44 DEG. F
C   26 BATTERY LEFT       125.50 DEG. F
C   27 BATTERY RIGHT      124.23 DEG. F
C   28 AIR IN SET         126.62 DEG. F
C   29 FUEL TANK          74.747 DEG. F
C   30 FUEL OUTLET        96.314 DEG. F

END SCAN GROUP 1      04 JAN 88  12:56:03

STOPPED SINGLE SCAN   04 JAN 88  12:56:03
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BEGIN SCAN GROUP 1    04 JAN 88  13:16:
60 KW 60HZ GEN SET S/N DZO 2785

C    1 EXHAUST 1          1119.8 DEG. F
C    2 EXHAUST 2          1114.9 DEG. F
C    3 EXHAUST 3          1155.0 DEG. F
C    4 EXHAUST 4          1166.9 DEG. F
C    5 EXHAUST 5          1166.3 DEG. F
C    6 EXHAUST 6          1112.0 DEG. F
C    7 ENG. COOL. IN      197.99 DEG. F
C    8 ENG. COOL. OUT     213.98 DEG. F
C    9 OIL SUMP           230.32 DEG. F
C   10 WATER TEMP/HEAD    220.16 DEG. F
C   11 OIL COOLER IN      235.64 DEG. F
C   12 OIL COOLER OUT     220.30 DEG. F
C   13  ENG. INTAKE       240.83 DEG. F
C   14 RAD. TOP LEFT      153.11 DEG. F
C   15 RAD. BTTM LEFT     143.35 DEG. F
C   16 RAD. TOP RIGHT     138.40 DEG. F
C   17 RAD. BTTM RIGHT    144.96 DEG. F
C   18 GEN. AIR IN        119.69 DEG. F
C   19 GEN. AIR OUT       131.78 DEG. F
C   20 GEN. FRAME TOP     125.49 DEG. F
C   21 GEN. FRAME BTTM    118.43 DEG. F
C   22 GEN. EXCITER       132.71 DEG. F
C   23 GEN. VOLT. REG.    122.75 DEG. F
C   24 CONTROL PANEL      121.94 DEG. F
C   25 RELAY AREA         128.15 DEG. F
C   26 BATTERY LEFT       145.49 DEG. F
C   27 BATTERY RIGHT      147.29 DEG. F
C   28 AIR IN SET         125.54 DEG. F
C   29 FUEL TANK          90.385 DEG. F
C   30 FUEL OUTLET        130.89 DEG. F

END SCAN GROUP 1      04 JAN 88  13:16:

STOPPED SINGLE SCAN   04 JAN 88  13:16:
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BEGIN SCAN GROUP 1    04 JAN 88  13:26:19
60 KW 60HZ GEN SET S/N DZO 2785

     1 EXHAUST 1          1109.5 DEG. F
     2 EXHAUST 2          1109.7 DEG. F
     3 EXHAUST 3          1153.7 DEG. F
     4 EXHAUST 4          1168.2 DEG. F
     5 EXHAUST 5          1159.5 DEG. F
     6 EXHAUST 6          1116.8 DEG. F
     7 ENG. COOL. IN       199.14 DEG. F
     8 ENG. COOL. OUT      215.39 DEG. F
     9 OIL SUMP            232.46 DEG. F
    10 WATER TEMP/HEAD     221.71 DEG. F
    11 OIL COOLER IN       237.72 DEG. F
    12 OIL COOLER OUT      222.13 DEG. F
    13  ENG. INTAKE        240.43 DEG. F
    14 RAD. TOP LEFT       154.02 DEG. F
    15 RAD. BTTM LEFT      144.16 DEG. F
    16 RAD. TOP RIGHT      140.20 DEG. F
    17 RAD. BTTM RIGHT     145.86 DEG. F
    18 GEN. AIR IN         118.70 DEG. F
    19 GEN. AIR OUT        135.91 DEG. F
    20 GEN. FRAME TOP      127.56 DEG. F
    21 GEN. FRAME BTTM     120.52 DEG. F
    22 GEN. EXCITER        133.56 DEG. F
    23 GEN. VOLT. REG.     125.63 DEG. F
    24 CONTROL PANEL       125.14 DEG. F
    25 RELAY AREA          128.24 DEG. F
    26 BATTERY LEFT        147.12 DEG. F
    27 BATTERY RIGHT       149.17 DEG. F
    28 AIR IN SET          125.85 DEG. F
    29 FUEL TANK           97.684 DEG. F
    30 FUEL OUTLET         132.45 DEG. F

END SCAN GROUP 1      04 JAN 88  13:26:29

STOPPED SINGLE SCAN   04 JAN 88  13:26:29
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BEGIN SCAN GROUP 1    04 JAN 88  13:36:19
60 KW 60HZ GEN SET S/N DZO 2785

     1 EXHAUST 1          1102.6 DEG. F
     2 EXHAUST 2          1111.4 DEG. F
     3 EXHAUST 3          1164.9 DEG. F
     4 EXHAUST 4          1177.4 DEG. F
     5 EXHAUST 5          1169.9 DEG. F
     6 EXHAUST 6          1130.1 DEG. F
     7 ENG. COOL. IN       199.88 DEG. F
     8 ENG. COOL. OUT      216.08 DEG. F
     9 OIL SUMP            234.00 DEG. F
    10 WATER TEMP/HEAD     222.56 DEG. F
    11 OIL COOLER IN       238.71 DEG. F
    12 OIL COOLER OUT      222.89 DEG. F
    13  ENG. INTAKE        241.49 DEG. F
    14 RAD. TOP LEFT       154.23 DEG. F
    15 RAD. BTTM LEFT      144.72 DEG. F
    16 RAD. TOP RIGHT      140.71 DEG. F
    17 RAD. BTTM RIGHT     146.52 DEG. F
    18 GEN. AIR IN         128.34 DEG. F
    19 GEN. AIR OUT        137.88 DEG. F
    20 GEN. FRAME TOP      128.72 DEG. F
    21 GEN. FRAME BTTM     121.98 DEG. F
    22 GEN. EXCITER        133.45 DEG. F
    23 GEN. VOLT. REG.     127.14 DEG. F
    24 CONTROL PANEL       126.73 DEG. F
    25 RELAY AREA          128.72 DEG. F
    26 BATTERY LEFT        148.09 DEG. F
    27 BATTERY RIGHT       150.30 DEG. F
    28 AIR IN SET          126.48 DEG. F
    29 FUEL TANK           103.62 DEG. F
    30 FUEL OUTLET         139.23 DEG. F

END SCAN GROUP 1      04 JAN 88  13:36:29

STOPPED SINGLE SCAN   04 JAN 88  13:36:29
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BEGIN SCAN GROUP 1    04 JAN 88  13:38:2
60 KW 60HZ GEN SET S/N DZO 2785

     1 EXHAUST 1          624.62 DEG. F
     2 EXHAUST 2          575.54 DEG. F
     3 EXHAUST 3          602.66 DEG. F
     4 EXHAUST 4          649.04 DEG. F
     5 EXHAUST 5          661.56 DEG. F
     6 EXHAUST 6          603.61 DEG. F
     7 ENG. COOL. IN       195.33 DEG. F
     8 ENG. COOL. OUT      208.27 DEG. F
     9 OIL SUMP            235.43 DEG. F
    10 WATER TEMP/HEAD     215.00 DEG. F
    11 OIL COOLER IN       236.17 DEG. F
    12 OIL COOLER OUT      220.54 DEG. F
    13  ENG. INTAKE        184.12 DEG. F
    14 RAD. TOP LEFT       152.42 DEG. F
    15 RAD. BTTM LEFT      143.52 DEG. F
    16 RAD. TOP RIGHT      140.11 DEG. F
    17 RAD. BTTM RIGHT     145.61 DEG. F
    18 GEN. AIR IN         118.52 DEG. F
    19 GEN. AIR OUT        136.84 DEG. F
    20 GEN. FRAME TOP      128.63 DEG. F
    21 GEN. FRAME BTTM     121.60 DEG. F
    22 GEN. EXCITER        133.15 DEG. F
    23 GEN. VOLT. REG.     127.37 DEG. F
    24 CONTROL PANEL       127.17 DEG. F
    25 RELAY AREA          128.41 DEG. F
    26 BATTERY LEFT        148.48 DEG. F
    27 BATTERY RIGHT       150.48 DEG. F
    28 AIR IN SET          125.07 DEG. F
    29 FUEL TANK           105.45 DEG. F
    30 FUEL OUTLET         139.83 DEG. F

END SCAN GROUP 1      04 JAN 88  13:38:7

STOPPED SINGLE SCAN   04 JAN 88  13:38:7
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BEGIN SCAN GROUP 1    04 JAN 88  13:40:5
60 KW 60HZ GEN SET S/N DZO 2785

     1 EXHAUST 1          495.31 DEG. F
     2 EXHAUST 2          447.65 DEG. F
     3 EXHAUST 3          469.86 DEG. F
     4 EXHAUST 4          497.68 DEG. F
     5 EXHAUST 5          499.91 DEG. F
     6 EXHAUST 6          449.82 DEG. F
     7 ENG. COOL. IN       175.15 DEG. F
     8 ENG. COOL. OUT      185.57 DEG. F
     9 OIL SUMP            221.30 DEG. F
    10 WATER TEMP/HEAD     190.86 DEG. F
    11 OIL COOLER IN       219.50 DEG. F
    12 OIL COOLER OUT      204.01 DEG. F
    13  ENG. INTAKE        160.54 DEG. F
    14 RAD. TOP LEFT       144.36 DEG. F
    15 RAD. BTTM LEFT      138.36 DEG. F
    16 RAD. TOP RIGHT      136.14 DEG. F
    17 RAD. BTTM RIGHT     140.52 DEG. F
    18 GEN. AIR IN         116.47 DEG. F
    19 GEN. AIR OUT        133.53 DEG. F
    20 GEN. FRAME TOP      127.80 DEG. F
    21 GEN. FRAME BTTM     121.03 DEG. F
    22 GEN. EXCITER        131.47 DEG. F
    23 GEN. VOLT. REG.     127.44 DEG. F
    24 CONTROL PANEL       127.41 DEG. F
    25 RELAY AREA          126.27 DEG. F
    26 BATTERY LEFT        145.16 DEG. F
    27 BATTERY RIGHT       148.21 DEG. F
    28 AIR IN SET          124.43 DEG. F
    29 FUEL TANK           106.92 DEG. F
    30 FUEL OUTLET         139.71 DEG. F

END SCAN GROUP 1      04 JAN 88  13:41:0

STOPPED SINGLE SCAN   04 JAN 88  13:41:0
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BEGIN SCAN GROUP 1   04 JAN 88  13:42:20
60 KW 60HZ GEN SET S/N DZO 2785

C    1 EXHAUST 1          998.87 DEG. F
C    2 EXHAUST 2         1000.5 DEG. F
C    3 EXHAUST 3         1039.7 DEG. F
C    4 EXHAUST 4         1041.3 DEG. F
C    5 EXHAUST 5         1010.3 DEG. F
C    6 EXHAUST 6          997.96 DEG. F
C    7 ENG. COOL. IN      172.80 DEG. F
C    8 ENG. COOL. OUT     188.59 DEG. F
C    9 OIL SUMP           211.64 DEG. F
C   10 WATER TEMP/HEAD    192.35 DEG. F
C   11 OIL COOLER IN      214.69 DEG. F
C   12 OIL COOLER OUT     200.62 DEG. F
C   13  ENG. INTAKE       209.68 DEG. F
C   14 RAD. TOP LEFT      146.13 DEG. F
C   15 RAD. BTTM LEFT     148.86 DEG. F
C   16 RAD. TOP RIGHT     136.81 DEG. F
C   17 RAD. BTTM RIGHT    142.75 DEG. F
C   18 GEN. AIR IN        113.38 DEG. F
C   19 GEN. AIR OUT       132.36 DEG. F
C   20 GEN. FRAME TOP     126.56 DEG. F
C   21 GEN. FRAME BTTM    122.29 DEG. F
C   22 GEN. EXCITER       130.70 DEG. F
C   23 GEN. VOLT. REG.    127.35 DEG. F
C   24 CONTROL PANEL      127.44 DEG. F
C   25 RELAY AREA         124.00 DEG. F
C   26 BATTERY LEFT       144.02 DEG. F
C   27 BATTERY RIGHT      146.12 DEG. F
C   28 AIR IN SET         119.21 DEG. F
C   29 FUEL TANK          106.55 DEG. F
C   30 FUEL OUTLET        140.77 DEG. F

END SCAN GROUP 1     04 JAN 88  13:42:31

STOPPED SINGLE SCAN  04 JAN 88  13:42:31
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BEGIN SCAN GROUP 1   04 JAN 88  13:45:16
60 KW 60HZ GEN SET S/N DZO 2785

C    1 EXHAUST 1          572.83 DEG. F
C    2 EXHAUST 2          525.30 DEG. F
C    3 EXHAUST 3          546.72 DEG. F
C    4 EXHAUST 4          568.15 DEG. F
C    5 EXHAUST 5          593.83 DEG. F
C    6 EXHAUST 6          545.38 DEG. F
C    7 ENG. COOL. IN      182.62 DEG. F
C    8 ENG. COOL. OUT     193.44 DEG. F
C    9 OIL SUMP           216.98 DEG. F
C   10 WATER TEMP/HEAD    199.03 DEG. F
C   11 OIL COOLER IN      218.63 DEG. F
C   12 OIL COOLER OUT     205.16 DEG. F
C   13  ENG. INTAKE       172.08 DEG. F
C   14 RAD. TOP LEFT      145.41 DEG. F
C   15 RAD. BTTM LEFT     140.18 DEG. F
C   16 RAD. TOP RIGHT     138.35 DEG. F
C   17 RAD. BTTM RIGHT    141.91 DEG. F
C   18 GEN. AIR IN        118.49 DEG. F
C   19 GEN. AIR OUT       135.55 DEG. F
C   20 GEN. FRAME TOP     128.08 DEG. F
C   21 GEN. FRAME BTTM    123.27 DEG. F
C   22 GEN. EXCITER       131.34 DEG. F
C   23 GEN. VOLT. REG.    127.00 DEG. F
C   24 CONTROL PANEL      127.13 DEG. F
C   25 RELAY AREA         126.76 DEG. F
C   26 BATTERY LEFT       144.47 DEG. F
C   27 BATTERY RIGHT      146.60 DEG. F
C   28 AIR IN SET         125.05 DEG. F
C   29 FUEL TANK          108.67 DEG. F
C   30 FUEL OUTLET        137.71 DEG. F

END SCAN GROUP 1     04 JAN 88  13:45:26

STOPPED SINGLE SCAN  04 JAN 88  13:45:26
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BEGIN SCAN GROUP 1   04 JAN 88  13:47:47
60 KW 60HZ GEN SET S/N DZO 2785

C    1 EXHAUST 1         1039.5 DEG. F
C    2 EXHAUST 2         1036.3 DEG. F
C    3 EXHAUST 3         1072.1 DEG. F
C    4 EXHAUST 4         1090.4 DEG. F
C    5 EXHAUST 5         1056.9 DEG. F
C    6 EXHAUST 6         1039.1 DEG. F
C    7 ENG. COOL. IN      176.22 DEG. F
C    8 ENG. COOL. OUT     192.27 DEG. F
C    9 OIL SUMP           208.97 DEG. F
C   10 WATER TEMP/HEAD    196.68 DEG. F
C   11 OIL COOLER IN      214.37 DEG. F
C   12 OIL COOLER OUT     200.67 DEG. F
C   13  ENG. INTAKE       219.66 DEG. F
C   14 RAD. TOP LEFT      143.65 DEG. F
C   15 RAD. BTTM LEFT     139.43 DEG. F
C   16 RAD. TOP RIGHT     137.04 DEG. F
C   17 RAD. BTTM RIGHT    140.92 DEG. F
C   18 GEN. AIR IN        115.80 DEG. F
C   19 GEN. AIR OUT       134.72 DEG. F
C   20 GEN. FRAME TOP     127.43 DEG. F
C   21 GEN. FRAME BTTM    122.27 DEG. F
C   22 GEN. EXCITER       130.80 DEG. F
C   23 GEN. VOLT. REG.    127.47 DEG. F
C   24 CONTROL PANEL      126.84 DEG. F
C   25 RELAY AREA         125.06 DEG. F
C   26 BATTERY LEFT       143.21 DEG. F
C   27 BATTERY RIGHT      145.55 DEG. F
C   28 AIR IN SET         123.40 DEG. F
C   29 FUEL TANK          109.22 DEG. F
C   30 FUEL OUTLET        138.93 DEG. F

END SCAN GROUP 1     04 JAN 88  13:47:57

STOPPED SINGLE SCAN  04 JAN 88  13:47:57
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BEGIN SCAN GROUP 1   04 JAN 88  13:53:36
60 KW 60HZ GEN SET S/N DZO 2785

C    1 EXHAUST 1         1105.4 DEG. F
C    2 EXHAUST 2         1110.7 DEG. F
C    3 EXHAUST 3         1159.2 DEG. F
C    4 EXHAUST 4         1171.0 DEG. F
C    5 EXHAUST 5         1154.9 DEG. F
C    6 EXHAUST 6         1120.5 DEG. F
C    7 ENG. COOL. IN      196.72 DEG. F
C    8 ENG. COOL. OUT     211.63 DEG. F
C    9 OIL SUMP           222.58 DEG. F
C   10 WATER TEMP/HEAD    217.12 DEG. F
C   11 OIL COOLER IN      228.84 DEG. F
C   12 OIL COOLER OUT     215.56 DEG. F
C   13  ENG. INTAKE       242.21 DEG. F
C   14 RAD. TOP LEFT      154.22 DEG. F
C   15 RAD. BTTM LEFT     146.37 DEG. F
C   16 RAD. TOP RIGHT     143.40 DEG. F
C   17 RAD. BTTM RIGHT    147.99 DEG. F
C   18 GEN. AIR IN        122.98 DEG. F
C   19 GEN. AIR OUT       141.74 DEG. F
C   20 GEN. FRAME TOP     132.67 DEG. F
C   21 GEN. FRAME BTTM    127.50 DEG. F
C   22 GEN. EXCITER       136.58 DEG. F
C   23 GEN. VOLT. REG.    129.69 DEG. F
C   24 CONTROL PANEL      128.74 DEG. F
C   25 RELAY AREA         132.33 DEG. F
C   26 BATTERY LEFT       147.94 DEG. F
C   27 BATTERY RIGHT      149.90 DEG. F
C   28 AIR IN SET         126.91 DEG. F
C   29 FUEL TANK          111.90 DEG. F
C   30 FUEL OUTLET        135.12 DEG. F

END SCAN GROUP 1     04 JAN 88  13:53:4

STOPPED SINGLE SCAN  04 JAN 88  13:53:4
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BEGIN SCAN GROUP 1    04 JAN 88  13:54:10
60 KW 60HZ GEN SET S/N DZO 2785

C    1 EXHAUST 1          799.40 DEG. F
C    2 EXHAUST 2          768.69 DEG. F
C    3 EXHAUST 3          788.99 DEG. F
C    4 EXHAUST 4          825.52 DEG. F
C    5 EXHAUST 5          837.66 DEG. F
C    6 EXHAUST 6          787.27 DEG. F
C    7 ENG. COOL. IN      196.94 DEG. F
C    8 ENG. COOL. OUT     210.64 DEG. F
C    9 OIL SUMP           225.37 DEG. F
C   10 WATER TEMP/HEAD    216.97 DEG. F
C   11 OIL COOLER IN      230.10 DEG. F
C   12 OIL COOLER OUT     216.72 DEG. F
C   13  ENG. INTAKE       207.73 DEG. F
C   14 RAD. TOP LEFT      152.54 DEG. F
C   15 RAD. BTTM LEFT     144.74 DEG. F
C   16 RAD. TOP RIGHT     141.89 DEG. F
C   17 RAD. BTTM RIGHT    146.54 DEG. F
C   18 GEN. AIR IN        121.65 DEG. F
C   19 GEN. AIR OUT       140.88 DEG. F
C   20 GEN. FRAME TOP     131.36 DEG. F
C   21 GEN. FRAME BTTM    125.61 DEG. F
C   22 GEN. EXCITER       135.88 DEG. F
C   23 GEN. VOLT. REG.    129.87 DEG. F
C   24 CONTROL PANEL      128.95 DEG. F
C   25 RELAY AREA         130.57 DEG. F
C   26 BATTERY LEFT       148.33 DEG. F
C   27 BATTERY RIGHT      150.34 DEG. F
C   28 AIR IN SET         125.26 DEG. F
C   29 FUEL TANK          112.61 DEG. F
C   30 FUEL OUTLET        137.60 DEG. F

END SCAN GROUP 1      04 JAN 88  13:54:20

STOPPED SINGLE SCAN  04 JAN 88  13:54:20


BEGIN SCAN GROUP 1    04 JAN 88  13:55:55
60 KW 60HZ GEN SET S/N DZO 2785

C    1 EXHAUST 1          531.72 DEG. F
C    2 EXHAUST 2          478.83 DEG. F
C    3 EXHAUST 3          498.40 DEG. F
C    4 EXHAUST 4          537.76 DEG. F
C    5 EXHAUST 5          545.37 DEG. F
C    6 EXHAUST 6          493.78 DEG. F
C    7 ENG. COOL. IN      182.98 DEG. F
C    8 ENG. COOL. OUT     193.38 DEG. F
C    9 OIL SUMP           223.52 DEG. F
C   10 WATER TEMP/HEAD    199.14 DEG. F
C   11 OIL COOLER IN      222.77 DEG. F
C   12 OIL COOLER OUT     208.23 DEG. F
C   13  ENG. INTAKE       168.22 DEG. F
C   14 RAD. TOP LEFT      148.31 DEG. F
C   15 RAD. BTTM LEFT     141.83 DEG. F
C   16 RAD. TOP RIGHT     139.90 DEG. F
C   17 RAD. BTTM RIGHT    143.94 DEG. F
C   18 GEN. AIR IN        121.74 DEG. F
C   19 GEN. AIR OUT       138.41 DEG. F
C   20 GEN. FRAME TOP     123.77 DEG. F
C   21 GEN. FRAME BTTM    124.36 DEG. F
C   22 GEN. EXCITER       133.97 DEG. F
C   23 GEN. VOLT. REG.    129.77 DEG. F
C   24 CONTROL PANEL      129.46 DEG. F
C   25 RELAY AREA         128.61 DEG. F
C   26 BATTERY LEFT       147.98 DEG. F
C   27 BATTERY RIGHT      149.98 DEG. F
C   28 AIR IN SET         127.39 DEG. F
C   29 FUEL TANK          113.70 DEG. F
C   30 FUEL OUTLET        141.40 DEG. F

END SCAN GROUP 1      04 JAN 88  13:56:05

STOPPED SINGLE SCAN  04 JAN 88  13:56:05
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TEST DATA

ITEM 60 KW 60 HZ GENERATOR SET MODIFIED

MFGR. KURZ + ROOT

MODEL NO. MEP 006A

SERIAL NO. 020 2285

NTS

National Technical Systems | Scientific Services Group | Testing Division, PO Box 38, Harlwood, Virginia 22471, Tel. 703 752 5300

FREQUENCY ADJUSTMENT RANGE

REF. NO. MIL-STD 705 ; 511.2

SHEET 1 OF 1

DATE 4 JAN 1988

JOB NO. 555-2140

PROJ. ENGR.

RECORDER/OBSERVER BT/RS/KM

INST TIME	STEP NO.	LOAD STEP	E6029D VOLTAGE L_1-L_0 VAC	L_2-L_0 VAC	L_3-L_0 VAC	E6040D AMPERES x 80 L_1-L_0 AC AMPS	L_2-L_0 AC AMPS	L_3-L_0 AC AMPS	E6230D KILOWATTS x 80 L_1-L_0 Kw	L_2-L_0 Kw	L_3-L_0 Kw	E6242D POWER FACTOR PF	E6241D FREQ. Hz	E6167D EXCITER VOLTS VDC	E6249D FIELD AMPS DCA	AMB. TEMP. °F	PRESS IN. HG. INT/EXH
1400			START	STABILIZATION		FOR	FREQUENCY	ADJUSTMENT	RANGE	TEST						[illegible]	
1406		R/L	119.5	119.5	119.4	2.53	2.54	2.54	.245	.25	.25	.80	60.1	13.2	3.4	126.2	15.8/15.2
1415		R/L	119	119	119	2.52	.54	.54	.245	.25	.25	.8	60.1	13.2	3.44	127	15.2/15.4
1425		ABORT TEST -	ENG COOLANT OUT =			218°F			WATER JACKET TEMP = 224°F								
1514		RESTARTED UNIT															
1525		R/L	119.5	119.5	119.5	2.52	2.53	2.53	.249	.249	.25	.80	60.2	13.8	3.35	125	15.6/15.5
1535		R/L	119.5	119.5	119.5	2.52	2.53	2.54	.249	.249	.25	.80	60.2	14.0	3.4	124	15.4/15.4
1542		SHUT UNIT DOWN -	ENG	COOLANT	OUT	220°F	- CYL HEAD WATER 227										
1555		STARTED UNIT @	N/L -	OPERATING @	120°F AS PER R. ANDERSON												
1601		APPLIED RATED	LOAD														
1605		R/L	119.9	120.0	120.0	2.53	2.54	2.54	.249	.25	.251	.80	60.4	13.2	3.3	121	15.4/15.5
1615		R/L	119.5	119.9	119.9	2.52	2.53	2.54	.249	.25	.25	.80	60.4	13.4	3.35	121	15.7/15.5
1625		R/L	119.5	119.8	119.5	2.52	2.54	2.54	249	.25	.251	.80	60.3	13.6	3.4	120	15.7/15.5
1635		R/L	119.5	119.9	119.5	2.52	2.53	2.54	.249	.25	.251	.80	60.4	13.5	3.4	120	15.6/15.6
1637		ADJUSTED FREQUENCY TO 62 HZ															
1639		R/L	119.5	119.5	119.0	2.54	2.55	2.55	.249	.249	.25	.80	62.0	13.2	3.25	120	15.8/16.1
1642		ADJUSTED FREQUENCY TO 58 HZ														+20	
1644		R/L	120	120.1	120.1	2.49	2.49	2.5	.25	.251	.251	.80	58.0	14.4	3.6	120	16.0/15.0
1646		N/L	LOCK	RATED	LOAD	OFF	SET										
1649		N/L	123	123	123	—	—	—	—	—	—	—	59.7	6.1	1.45	120	2.1/6.5
1650		SHUT	UNIT	DOWN -	END	OF	TEST										

NOTES:

B-21

Frequency Adjustment Method 5.2

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BEGIN SCAN GROUP 1    04 JAN 88  14:05:39
60 KW/60HZ GEN SET S/N DZO 2785

C    1 EXHAUST 1          1117.8 DEG. F
C    2 EXHAUST 2          1112.0 DEG. F
C    3 EXHAUST 3          1147.5 DEG. F
C    4 EXHAUST 4          1168.5 DEG. F
C    5 EXHAUST 5          1158.2 DEG. F
C    6 EXHAUST 6          1108.9 DEG. F
C    7 ENG. COOL. IN      196.92 DEG. F
C    8 ENG. COOL. OUT     212.20 DEG. F
C    9 OIL SUMP           225.70 DEG. F
C   10 WATER TEMP/HEAD    217.93 DEG. F
C   11 OIL COOLER IN      231.89 DEG. F
C   12 OIL COOLER OUT     217.64 DEG. F
C   13  ENG. INTAKE       240.27 DEG. F
C   14 RAD. TOP LEFT      153.10 DEG. F
C   15 RAD. BTTM LEFT     144.53 DEG. F
C   16 RAD. TOP RIGHT     141.92 DEG. F
C   17 RAD. BTTM RIGHT    146.40 DEG. F
C   18 GEN. AIR IN        119.41 DEG. F
C   19 GEN. AIR OUT       139.97 DEG. F
C   20 GEN. FRAME TOP     130.25 DEG. F
C   21 GEN. FRAME BTTM    124.41 DEG. F
C   22 GEN. EXCITER       133.70 DEG. F
C   23 GEN. VOLT. REG.    129.38 DEG. F
C   24 CONTROL PANEL      128.87 DEG. F
C   25 RELAY AREA         129.21 DEG. F
C   26 BATTERY LEFT       147.66 DEG. F
C   27 BATTERY RIGHT      150.00 DEG. F
C   28 AIR IN SET         126.85 DEG. F
C   29 FUEL TANK          117.02 DEG. F
C   30 FUEL OUTLET        140.43 DEG. F

END SCAN GROUP 1      04 JAN 88  14:05:50

STOPPED SINGLE SCAN   04 JAN 88  14:05:50
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BEGIN SCAN GROUP 1    04 JAN 88  15:25:18
60 KW/60HZ GEN SET S/N DZO 2785

C    1 EXHAUST 1          1098.7 DEG. F
C    2 EXHAUST 2          1105.6 DEG. F
C    3 EXHAUST 3          1151.0 DEG. F
C    4 EXHAUST 4          1174.3 DEG. F
C    5 EXHAUST 5          1168.1 DEG. F
C    6 EXHAUST 6          1113.0 DEG. F
C    7 ENG. COOL. IN      194.39 DEG. F
C    8 ENG. COOL. OUT     210.14 DEG. F
C    9 OIL SUMP           224.29 DEG. F
C   10 WATER TEMP/HEAD    216.25 DEG. F
C   11 OIL COOLER IN      231.52 DEG. F
C   12 OIL COOLER OUT     216.91 DEG. F
C   13  ENG. INTAKE       243.78 DEG. F
C   14 RAD. TOP LEFT      154.55 DEG. F
C   15 RAD. BTTM LEFT     146.77 DEG. F
C   16 RAD. TOP RIGHT     146.58 DEG. F
C   17 RAD. BTTM RIGHT          OPEN TC
C   18 GEN. AIR IN        123.95 DEG. F
C   19 GEN. AIR OUT       149.87 DEG. F
C   20 GEN. FRAME TOP     137.11 DEG. F
C   21 GEN. FRAME BTTM    142.49 DEG. F
C   22 GEN. EXCITER       144.10 DEG. F
C   23 GEN. VOLT. REG.    138.55 DEG. F
C   24 CONTROL PANEL      139.70 DEG. F
C   25 RELAY AREA         139.90 DEG. F
C   26 BATTERY LEFT       146.99 DEG. F
C   27 BATTERY RIGHT      151.26 DEG. F
C   28 AIR IN SET         125.65 DEG. F
C   29 FUEL TANK          124.70 DEG. F
C   30 FUEL OUTLET        148.10 DEG. F

END SCAN GROUP 1      04 JAN 88  15:25:28

STOPPED SINGLE SCAN   04 JAN 88  15:25:28
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BEGIN SCAN GROUP 1    04 JAN 88  14:15:28
60 KW/60HZ GEN SET S/N DZO 2785

C    1 EXHAUST 1          1115.0 DEG. F
C    2 EXHAUST 2          1109.7 DEG. F
C    3 EXHAUST 3          1150.0 DEG. F
C    4 EXHAUST 4          1172.3 DEG. F
C    5 EXHAUST 5          1163.3 DEG. F
C    6 EXHAUST 6          1114.7 DEG. F
C    7 ENG. COOL. IN      200.75 DEG. F
C    8 ENG. COOL. OUT     216.74 DEG. F
C    9 OIL SUMP           233.09 DEG. F
C   10 WATER TEMP/HEAD    222.71 DEG. F
C   11 OIL COOLER IN      238.90 DEG. F
C   12 OIL COOLER OUT     223.46 DEG. F
C   13  ENG. INTAKE       242.05 DEG. F
C   14 RAD. TOP LEFT      155.07 DEG. F
C   15 RAD. BTTM LEFT     145.64 DEG. F
C   16 RAD. TOP RIGHT     142.91 DEG. F
C   17 RAD. BTTM RIGHT    148.03 DEG. F
C   18 GEN. AIR IN        118.95 DEG. F
C   19 GEN. AIR OUT       141.02 DEG. F
C   20 GEN. FRAME TOP     130.52 DEG. F
C   21 GEN. FRAME BTTM    124.62 DEG. F
C   22 GEN. EXCITER       134.15 DEG. F
C   23 GEN. VOLT. REG.    129.74 DEG. F
C   24 CONTROL PANEL      129.23 DEG. F
C   25 RELAY AREA         129.25 DEG. F
C   26 BATTERY LEFT       151.01 DEG. F
C   27 BATTERY RIGHT      153.04 DEG. F
C   28 AIR IN SET         127.01 DEG. F
C   29 FUEL TANK          122.10 DEG. F
C   30 FUEL OUTLET        137.68 DEG. F

END SCAN GROUP 1      04 JAN 88  14:15:38

STOPPED SINGLE SCAN   04 JAN 88  14:15:38
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BEGIN SCAN GROUP 1    04 JAN 88  15:35:54
60 KW/60HZ GEN SET S/N DZO 2785

C    1 EXHAUST 1          1106.9 DEG. F
C    2 EXHAUST 2          1114.6 DEG. F
C    3 EXHAUST 3          1162.6 DEG. F
C    4 EXHAUST 4          1178.1 DEG. F
C    5 EXHAUST 5          1173.6 DEG. F
C    6 EXHAUST 6          1112.9 DEG. F
C    7 ENG. COOL. IN      198.58 DEG. F
C    8 ENG. COOL. OUT     214.78 DEG. F
C    9 OIL SUMP           231.80 DEG. F
C   10 WATER TEMP/HEAD    221.30 DEG. F
C   11 OIL COOLER IN      238.93 DEG. F
C   12 OIL COOLER OUT     222.98 DEG. F
C   13  ENG. INTAKE       246.07 DEG. F
C   14 RAD. TOP LEFT      155.98 DEG. F
C   15 RAD. BTTM LEFT     149.43 DEG. F
C   16 RAD. TOP RIGHT     148.81 DEG. F
C   17 RAD. BTTM RIGHT    146.07 DEG. F
C   18 GEN. AIR IN        121.64 DEG. F
C   19 GEN. AIR OUT       152.09 DEG. F
C   20 GEN. FRAME TOP     137.50 DEG. F
C   21 GEN. FRAME BTTM    146.40 DEG. F
C   22 GEN. EXCITER       143.75 DEG. F
C   23 GEN. VOLT. REG.    136.68 DEG. F
C   24 CONTROL PANEL      137.21 DEG. F
C   25 RELAY AREA         140.51 DEG. F
C   26 BATTERY LEFT       152.00 DEG. F
C   27 BATTERY RIGHT      156.72 DEG. F
C   28 AIR IN SET         124.22 DEG. F
C   29 FUEL TANK          130.19 DEG. F
C   30 FUEL OUTLET        143.54 DEG. F

END SCAN GROUP 1      04 JAN 88  15:36:04

STOPPED SINGLE SCAN   04 JAN 88  15:36:04
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BEGIN SCAN GROUP 1    04 JAN 88  15:42:12
60 KW 60HZ GEN SET S/N DZO 2785

C    1 EXHAUST 1          1105.1 DEG. F
C    2 EXHAUST 2          1111.5 DEG. F
C    3 EXHAUST 3          1159.5 DEG. F
C    4 EXHAUST 4          1186.3 DEG. F
C    5 EXHAUST 5          1173.0 DEG. F
C    6 EXHAUST 6          1125.8 DEG. F
C    7 ENG. COOL. IN       204.82 DEG. F
C    8 ENG. COOL. OUT      220.85 DEG. F
C    9 OIL SUMP            236.04 DEG. F
C   10 WATER TEMP/HEAD     227.25 DEG. F
C   11 OIL COOLER IN       242.19 DEG. F
C   12 OIL COOLER OUT      227.05 DEG. F
C   13  ENG. INTAKE        246.14 DEG. F
C   14 RAD. TOP LEFT       159.36 DEG. F
C   15 RAD. BTTM LEFT      149.02 DEG. F
C   16 RAD. TOP RIGHT      146.32 DEG. F
C   17 RAD. BTTM RIGHT            OPEN TC
C   18 GEN. AIR IN         121.66 DEG. F
C   19 GEN. AIR OUT        147.21 DEG. F
C   20 GEN. FRAME TOP      135.46 DEG. F
C   21 GEN. FRAME BTTM     131.40 DEG. F
C   22 GEN. EXCITER        138.29 DEG. F
C   23 GEN. VOLT. REG.     136.14 DEG. F
C   24 CONTROL PANEL       135.99 DEG. F
C   25 RELAY AREA          133.43 DEG. F
C   26 BATTERY LEFT        154.58 DEG. F
C   27 BATTERY RIGHT       157.90 DEG. F
C   28 AIR IN SET          126.75 DEG. F
C   29 FUEL TANK           132.05 DEG. F
C   30 FUEL OUTLET         148.31 DEG. F

END SCAN GROUP 1      04 JAN 88  15:42:22

STOPPED SINGLE SCAN   04 JAN 88  15:42:22
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BEGIN SCAN GROUP 1    04 JAN 88  16:15:1
60 KW 60HZ GEN SET S/N DZO 2785

C    1 EXHAUST 1          1088.4 DEG. F
C    2 EXHAUST 2          1086.3 DEG. F
C    3 EXHAUST 3          1132.6 DEG. F
C    4 EXHAUST 4          1164.4 DEG. F
C    5 EXHAUST 5          1153.7 DEG. F
C    6 EXHAUST 6          1101.7 DEG. F
C    7 ENG. COOL. IN       195.58 DEG. F
C    8 ENG. COOL. OUT      211.33 DEG. F
C    9 OIL SUMP            227.71 DEG. F
C   10 WATER TEMP/HEAD     217.54 DEG. F
C   11 OIL COOLER IN       233.97 DEG. F
C   12 OIL COOLER OUT      218.72 DEG. F
C   13  ENG. INTAKE        236.84 DEG. F
C   14 RAD. TOP LEFT       150.06 DEG. F
C   15 RAD. BTTM LEFT      141.45 DEG. F
C   16 RAD. TOP RIGHT      139.63 DEG. F
C   17 RAD. BTTM RIGHT            OPEN TC
C   18 GEN. AIR IN         117.28 DEG. F
C   19 GEN. AIR OUT        139.63 DEG. F
C   20 GEN. FRAME TOP      127.44 DEG. F
C   21 GEN. FRAME BTTM     122.31 DEG. F
C   22 GEN. EXCITER        130.48 DEG. F
C   23 GEN. VOLT. REG.     128.41 DEG. F
C   24 CONTROL PANEL       128.02 DEG. F
C   25 RELAY AREA          125.32 DEG. F
C   26 BATTERY LEFT        147.72 DEG. F
C   27 BATTERY RIGHT       150.62 DEG. F
C   28 AIR IN SET          121.62 DEG. F
C   29 FUEL TANK           128.56 DEG. F
C   30 FUEL OUTLET         141.34 DEG. F

END SCAN GROUP 1      04 JAN 88  16:15:2

STOPPED SINGLE SCAN   04 JAN 88  16:15:2
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BEGIN SCAN GROUP 1    04 JAN 88  16:05:25
60 KW 60HZ GEN SET S/N DZO 2785

C    1 EXHAUST 1          1051.5 DEG. F
C    2 EXHAUST 2          1067.6 DEG. F
C    3 EXHAUST 3          1109.3 DEG. F
C    4 EXHAUST 4          1144.8 DEG. F
C    5 EXHAUST 5          1126.6 DEG. F
C    6 EXHAUST 6          1081.1 DEG. F
C    7 ENG. COOL. IN       188.42 DEG. F
C    8 ENG. COOL. OUT      203.07 DEG. F
C    9 OIL SUMP            214.01 DEG. F
C   10 WATER TEMP/HEAD     208.52 DEG. F
C   11 OIL COOLER IN       221.54 DEG. F
C   12 OIL COOLER OUT      208.27 DEG. F
C   13  ENG. INTAKE        230.12 DEG. F
C   14 RAD. TOP LEFT       144.80 DEG. F
C   15 RAD. BTTM LEFT      139.18 DEG. F
C   16 RAD. TOP RIGHT      138.72 DEG. F
C   17 RAD. BTTM RIGHT     138.84 DEG. F
C   18 GEN. AIR IN         118.30 DEG. F
C   19 GEN. AIR OUT        139.50 DEG. F
C   20 GEN. FRAME TOP      127.72 DEG. F
C   21 GEN. FRAME BTTM     124.60 DEG. F
C   22 GEN. EXCITER        129.35 DEG. F
C   23 GEN. VOLT. REG.     130.93 DEG. F
C   24 CONTROL PANEL       131.52 DEG. F
C   25 RELAY AREA          123.87 DEG. F
C   26 BATTERY LEFT        145.27 DEG. F
C   27 BATTERY RIGHT       148.02 DEG. F
C   28 AIR IN SET          121.15 DEG. F
C   29 FUEL TANK           129.70 DEG. F
C   30 FUEL OUTLET         147.07 DEG. F

END SCAN GROUP 1      04 JAN 88  16:05:36

STOPPED SINGLE SCAN   04 JAN 88  16:05:36
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BEGIN SCAN GROUP 1    04 JAN 88  16:25:2
60 KW 60HZ GEN SET S/N DZO 2785

C    1 EXHAUST 1          1079.8 DEG. F
C    2 EXHAUST 2          1082.5 DEG. F
C    3 EXHAUST 3          1128.5 DEG. F
C    4 EXHAUST 4          1160.7 DEG. F
C    5 EXHAUST 5          1146.8 DEG. F
C    6 EXHAUST 6          1096.6 DEG. F
C    7 ENG. COOL. IN       196.87 DEG. F
C    8 ENG. COOL. OUT      212.65 DEG. F
C    9 OIL SUMP            230.09 DEG. F
C   10 WATER TEMP/HEAD     218.98 DEG. F
C   11 OIL COOLER IN       236.61 DEG. F
C   12 OIL COOLER OUT      220.63 DEG. F
C   13  ENG. INTAKE        236.19 DEG. F
C   14 RAD. TOP LEFT       150.56 DEG. F
C   15 RAD. BTTM LEFT      141.58 DEG. F
C   16 RAD. TOP RIGHT      139.44 DEG. F
C   17 RAD. BTTM RIGHT     129.13 DEG. F
C   18 GEN. AIR IN         115.80 DEG. F
C   19 GEN. AIR OUT        139.27 DEG. F
C   20 GEN. FRAME TOP      126.78 DEG. F
C   21 GEN. FRAME BTTM     121.89 DEG. F
C   22 GEN. EXCITER        130.24 DEG. F
C   23 GEN. VOLT. REG.     127.95 DEG. F
C   24 CONTROL PANEL       127.25 DEG. F
C   25 RELAY AREA          124.90 DEG. F
C   26 BATTERY LEFT        149.03 DEG. F
C   27 BATTERY RIGHT       152.07 DEG. F
C   28 AIR IN SET          120.68 DEG. F
C   29 FUEL TANK           128.68 DEG. F
C   30 FUEL OUTLET         140.39 DEG. F

END SCAN GROUP 1      04 JAN 88  16:25:3

STOPPED SINGLE SCAN   04 JAN 88  16:25:3
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BEGIN SCAN GROUP 1 04 JAN 88 16:35:30
60 KW/60HZ GEN SET S/N DZ0 2785

C	1	EXHAUST 1	1077.4	DEG.	F
C	2	EXHAUST 2	1075.1	DEG.	F
C	3	EXHAUST 3	1125.1	DEG.	F
C	4	EXHAUST 4	1156.3	DEG.	F
C	5	EXHAUST 5	1145.7	DEG.	F
C	6	EXHAUST 6	1094.5	DEG.	F
C	7	ENG. COOL. IN	195.84	DEG.	F
C	8	ENG. COOL. OUT	211.81	DEG.	F
C	9	OIL SUMP	229.63	DEG.	F
C	10	WATER TEMP/HEAD	218.10	DEG.	F
C	11	OIL COOLER IN	235.69	DEG.	F
C	12	OIL COOLER OUT	219.85	DEG.	F
C	13	ENG. INTAKE	234.43	DEG.	F
C	14	RAD. TOP LEFT	149.57	DEG.	F
C	15	RAD. BTTM LEFT	140.64	DEG.	F
C	16	RAD. TOP RIGHT	138.96	DEG.	F
C	17	RAD. BTTM RIGHT		OPEN	TC
C	18	GEN. AIR IN	115.39	DEG.	F
C	19	GEN. AIR OUT	139.29	DEG.	F
C	20	GEN. FRAME TOP	126.23	DEG.	F
C	21	GEN. FRAME BTTM	121.36	DEG.	F
C	22	GEN. EXCITER	129.14	DEG.	F
C	23	GEN. VOLT. REG.	126.93	DEG.	F
C	24	CONTROL PANEL	126.23	DEG.	F
C	25	RELAY AREA	124.07	DEG.	F
C	26	BATTERY LEFT	148.84	DEG.	F
C	27	BATTERY RIGHT	151.91	DEG.	F
C	28	AIR IN SET	120.45	DEG.	F
C	29	FUEL TANK	128.90	DEG.	F
C	30	FUEL OUTLET	137.65	DEG.	F

END SCAN GROUP 1 04 JAN 88 16:35:41

STOPPED SINGLE SCAN 04 JAN 88 16:35:41

BEGIN SCAN GROUP 1 04 JAN 88 16:39:58
60 KW/60HZ GEN SET S/N DZ0 2785

C	1	EXHAUST 1	1075.4	DEG.	F
C	2	EXHAUST 2	1064.5	DEG.	F
C	3	EXHAUST 3	1112.6	DEG.	F
C	4	EXHAUST 4	1136.8	DEG.	F
C	5	EXHAUST 5	1130.3	DEG.	F
C	6	EXHAUST 6	1072.1	DEG.	F
C	7	ENG. COOL. IN	195.43	DEG.	F
C	8	ENG. COOL. OUT	211.16	DEG.	F
C	9	OIL SUMP	230.33	DEG.	F
C	10	WATER TEMP/HEAD	217.10	DEG.	F
C	11	OIL COOLER IN	235.43	DEG.	F
C	12	OIL COOLER OUT	219.88	DEG.	F
C	13	ENG. INTAKE	236.13	DEG.	F
C	14	RAD. TOP LEFT	149.98	DEG.	F
C	15	RAD. BTTM LEFT	141.00	DEG.	F
C	16	RAD. TOP RIGHT	139.44	DEG.	F
C	17	RAD. BTTM RIGHT		OPEN	TC
C	18	GEN. AIR IN	117.12	DEG.	F
C	19	GEN. AIR OUT	139.61	DEG.	F
C	20	GEN. FRAME TOP	126.36	DEG.	F
C	21	GEN. FRAME BTTM	121.67	DEG.	F
C	22	GEN. EXCITER	129.12	DEG.	F
C	23	GEN. VOLT. REG.	126.80	DEG.	F
C	24	CONTROL PANEL	125.61	DEG.	F
C	25	RELAY AREA	124.41	DEG.	F
C	26	BATTERY LEFT	149.22	DEG.	F
C	27	BATTERY RIGHT	152.33	DEG.	F
C	28	AIR IN SET	121.05	DEG.	F
C	29	FUEL TANK	128.80	DEG.	F
C	30	FUEL OUTLET	140.63	DEG.	F

END SCAN GROUP 1 04 JAN 88 16:40:08

STOPPED SINGLE SCAN 04 JAN 88 16:40:08

BEGIN SCAN GROUP 1 04 JAN 88 16:44:4
60 KW/60HZ GEN SET S/N DZ0 2785

C	1	EXHAUST 1	1127.2	DEG.	F
C	2	EXHAUST 2	1133.5	DEG.	F
C	3	EXHAUST 3	1169.1	DEG.	F
C	4	EXHAUST 4	1177.9	DEG.	F
C	5	EXHAUST 5	1181.2	DEG.	F
C	6	EXHAUST 6	1131.9	DEG.	F
C	7	ENG. COOL. IN	197.27	DEG.	F
C	8	ENG. COOL. OUT	213.78	DEG.	F
C	9	OIL SUMP	230.87	DEG.	F
C	10	WATER TEMP/HEAD	220.13	DEG.	F
C	11	OIL COOLER IN	236.39	DEG.	F
C	12	OIL COOLER OUT	220.08	DEG.	F
C	13	ENG. INTAKE	235.82	DEG.	F
C	14	RAD. TOP LEFT	150.19	DEG.	F
C	15	RAD. BTTM LEFT	141.22	DEG.	F
C	16	RAD. TOP RIGHT	139.47	DEG.	F
C	17	RAD. BTTM RIGHT		OPEN	TC
C	18	GEN. AIR IN	115.59	DEG.	F
C	19	GEN. AIR OUT	139.69	DEG.	F
C	20	GEN. FRAME TOP	126.06	DEG.	F
C	21	GEN. FRAME BTTM	121.78	DEG.	F
C	22	GEN. EXCITER	129.35	DEG.	F
C	23	GEN. VOLT. REG.	126.38	DEG.	F
C	24	CONTROL PANEL	125.67	DEG.	F
C	25	RELAY AREA	124.25	DEG.	F
C	26	BATTERY LEFT	148.80	DEG.	F
C	27	BATTERY RIGHT	151.56	DEG.	F
C	28	AIR IN SET	119.74	DEG.	F
C	29	FUEL TANK	128.81	DEG.	F
C	30	FUEL OUTLET	140.97	DEG.	F

END SCAN GROUP 1 04 JAN 88 16:44:5

STOPPED SINGLE SCAN 04 JAN 88 16:44:5

BEGIN SCAN GROUP 1 04 JAN 88 16:49:1
60 KW/60HZ GEN SET S/N DZ0 2785

C	1	EXHAUST 1	482.29	DEG.	F
C	2	EXHAUST 2	429.88	DEG.	F
C	3	EXHAUST 3	431.14	DEG.	F
C	4	EXHAUST 4	489.17	DEG.	F
C	5	EXHAUST 5	513.39	DEG.	F
C	6	EXHAUST 6	453.46	DEG.	F
C	7	ENG. COOL. IN	172.53	DEG.	F
C	8	ENG. COOL. OUT	183.69	DEG.	F
C	9	OIL SUMP	218.73	DEG.	F
C	10	WATER TEMP/HEAD	189.18	DEG.	F
C	11	OIL COOLER IN	217.55	DEG.	F
C	12	OIL COOLER OUT	202.19	DEG.	F
C	13	ENG. INTAKE	155.37	DEG.	F
C	14	RAD. TOP LEFT	141.87	DEG.	F
C	15	RAD. BTTM LEFT	136.99	DEG.	F
C	16	RAD. TOP RIGHT	136.62	DEG.	F
C	17	RAD. BTTM RIGHT		OPEN	TC
C	18	GEN. AIR IN	117.69	DEG.	F
C	19	GEN. AIR OUT	136.39	DEG.	F
C	20	GEN. FRAME TOP	125.42	DEG.	F
C	21	GEN. FRAME BTTM	121.61	DEG.	F
C	22	GEN. EXCITER	127.99	DEG.	F
C	23	GEN. VOLT. REG.	125.94	DEG.	F
C	24	CONTROL PANEL	125.48	DEG.	F
C	25	RELAY AREA	122.51	DEG.	F
C	26	BATTERY LEFT	146.77	DEG.	F
C	27	BATTERY RIGHT	149.87	DEG.	F
C	28	AIR IN SET	120.95	DEG.	F
C	29	FUEL TANK	129.08	DEG.	F
C	30	FUEL OUTLET	141.94	DEG.	F

END SCAN GROUP 1 04 JAN 88 16:49:2

STOPPED SINGLE SCAN 04 JAN 88 16:49:2

TEST DATA

ITEM 60 KW 60 HZ
GENERATOR SET
MODIFIED
MFGR. KURZ & ROOT
MODEL NO. MEP 006A
SERIAL NO. 020785

NTS
National Technical Systems | Scientific Services Group | Testing Division, PO Box 38, Hartwood, Virginia 22471, Tel 703 752 5300

REF. NO. MIL-STD 705; 513.2
SHEET 1 OF 1
DATE 4 JAN. 1985
JOB NO. 555-2140
PROJ. ENGR.
RECORDER/OBSERVER BJ/KM

INDICATING INSTRUMENT TEST (ELECTRICAL)
MASTER INSTRUMENTS

INST TIME	STEP NO.	LOAD STEP	E6028D VOLTAGE L_1-L_0 VAC	L_2-L_0 VAC	L_3-L_0 VAC	E6040D AMPERES X 80 L_1-L_0 AC AMPS	L_2-L_0 AC AMPS	L_3-L_0 AC AMPS	E6230D KILOWATTS X 80 L_1-L_0 Kw	L_2-L_0 Kw	L_3-L_0 Kw	E62420 POWER FACTOR PF	E62410 FREQ. Hz	E6167D EXCITER VOLTS VDC	E62480 FIELD AMPS DCA	AMB. TEMP. °F	EA	IF
1700			ZEROED PANEL INSTRUMENTS															
1705		N/L	STARTED UNIT NO LOAD															
1715	60 HZ	N/L	121.1	121.1	121.2													
1722	57 HZ	N/L	122	122.1	122								59.7	5.8	1.4	120°	4.2	1.6
1725	62 HZ	N/L	121	121	121.1								56.8	6.4	1.6	118°	5.3	1.4
1730	60 HZ	1/4	121	121.1	121.1	1.67	1.67	1.67	.1066	.1067	.1065	.80	61.9	8.1	1.4	119	6.5	1.8
1734	60 HZ	1/2	120.5	120.5	120.5	1.3	1.3	1.29	.125	.127	.128	.80	60.1	9.0	2.4	119	10	3.9
1738	60 HZ	3/4	120.1	120.1	120.1	1.9	1.91	1.91	.185	.188	.189	.80	59.9	11.0	2.7	121.0	12.4	6.1
1743	60 HZ	R/L	119.5	119.9	119.9	2.54	2.56	2.56	.25	.251	.252	.80	59.8	13.0	3.5	123	15.5	15.4
1744	END	OF	TEST															

NOTES: AMMETER OUT OF SPEC IN ACCORDANCE WITH MIL-G-52884A - MAX ERROR 6% L_3-L_0 AT RATED LOAD INDICATED 202 % ON PANEL METER WHICH CALCULATES OUT TO 222.8 AMPS MASTER AMMETER INDICATES 204.8 AMPS GIVING A NET DIFFERENCE OF 18 AMPS MAX ALLOWABLE IS 16.6 AMPS (6% of FULL SCALE)

D-35

TEST DATA

ITEM 60 KW 60 Hz GEN SET MODIFIED

MFGR. KURZ & ROUT

MODEL NO. MEP 006A

SERIAL NO. 02 0 2785

NTS

National Technical Systems | Scientific Services Group | Testing Division, PO Box 38, Hallwood, Virginia 22471, Tel 703 752 5300

REF. NO. MIL-STD 705; 513.2

SHEET 1 OF 1

DATE 4 JAN 1988

JOB NO. 555-2140

PROJ. ENGR.

RECORDER/OBSERVER BJ

INDICATING INSTRUMENT TEST (ELECTRICAL)
PANEL INSTRUMENTS

INST TIME	STEP NO.	LOAD STEP	VOLTAGE L_1-L_0 VAC	VOLTAGE L_2-L_0 VAC	VOLTAGE L_3-L_0 VAC	AMPERES L_1-L_0 AC AMPS	AMPERES L_2-L_0 AC AMPS	AMPERES L_3-L_0 AC AMPS	KILOWATTS L_1-L_0 Kw	KILOWATTS L_2-L_0 Kw	KILOWATTS L_3-L_0 Kw	POWER FACTOR PF	FREQ. Hz	% LOAD L_1-L_0	% LOAD L_2-L_0	% LOAD L_3-L_0	AMB. TEMP °F
1700		ZEROED	PANEL	INSTRUMENTS													
1705		STARTED	UNIT	@ N/L													
1718		N/L	120	120	120	0	0	0	NA	NA	NA	NA	60	0	0	0	120
1722		N/L	120	120	120	0	0	0	NA	NA	NA	NA	57	0	0	0	118
1725		N/L	120	120	120	0	0	0	NA	NA	NA	NA	62	0	0	0	119
1730		1/4	120	120	120	27	27	27	NA	NA	NA	NA	60	27	27	27	119
1734		2/4	120	120	120	55	55	55	NA	NA	NA	NA	60	52	52	52	123
1738		3/4	120	120	120	84	84	84	NA	NA	NA	NA	60	76	76	76	121
1743		4/4	120	120	120	106	106	107	NA	NA	NA	NA	60	100	100	100	123
1744		END OF	TEST	SHUT	UNIT	DOWN											

NOTES: FREQUENCY METER EXCEEDED 0.5% AS PER PROCUREMENT DOC. PARA 3.16.2.4 a (2)

P-34

TEST DATA

ITEM: 60 KW, 60 Hz Generator Set Modified

MFGR. Kurz & Root

MODEL NO. MEP 006A

SERIAL NO. 020 2785

National Technical Systems Scientific Services Group — Testing Division, P.O. Box 38, Hartwood, Virginia 22471, Tel: 703 752 5300

Panel Instrument Test

Method 513.2 (computation sheet)

REF. NO. Mil.-Std. 705, 513.2

SHEET 1 OF 2

DATE 14 Jan. 88

JOB NO. 555-2140

PROJ. ENGR.

RECORDER/OBSERVER BJ

INST. → / ↓	Volts L_1-L_0	% Error	Volts L_2-L_0	% Error	Volts L_3-L_0	% Error	Amps L_1-L_0	% Error	Amps L_2-L_0	% Error	Amps L_3-L_0	% Error
UNITS												
SYM.												
1718	120	0.910	120	0.910	120	0.990	0		0		0	
1722	120	1.64	120	1.72	120	1.64	0		0		0	
1725	120	0.826	120	0.826	120	0.910	0		0		0	
1730	120	0.826	120	0.910	120	0.910	27	4.94	27	4.44	27	4.94
1734	120	0.415	120	0.415	120	0.415	55	10.2	55	10.2	55	11.0
1738	120	0.083	120	0.083	120	0.083	84	15.1	84	14.5	84	14.5
1743	120	0.418	120	0.083	120	0.083	106	8.67	106	7.83	107	8.85
1744	EOT											

NOTES:

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TEST DATA

ITEM 60 kW, 60 Hz Generator Set Modified

MFGR. Kurz & Root

MODEL NO. M&P 006 A

SERIAL NO. DZO 2785

NTS

National Technical Systems | Scientific Services Group | Testing Division, PO Box 38, Hartwood, Virginia 22471, Tel 703 752 5300

Panel Instrument Test

Method 513.2 (computation sheet)

REF. NO. Mil Std 705, 513.2

SHEET 2 OF 2

DATE 14 Jan 88

JOB NO. 655-2140

PROJ. ENGR.

RECORDER/OBSERVER BU

INST. → / ↓	% Load L_1-L_o	% Error	% Load L_2-L_o	% Error	% Load L_3-L_o	% Error		Frequency	% Error			
UNITS												
SYM.												
1718	0		0		0			60	0.502			
1722	0		0		0			57	0.352			
1725	0		0		0			62	0.161			
1730	27	2.27	27	0.746	27	0.735		60	0.334			
1734	52	4.00	52	2.36	52	1.56		60	0.166			
1738	76	2.70	76	1.06	76	0.529		60	0.167			
1743	100	0	100	0.398	100	0.794		60	0.334			
1744												

NOTES:

3C-3

Indicating Instrument Test, Method 5.5.2

BEGIN SCAN GROUP 1 04 JAN 88 17:18:08
60 KW 60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	440.35	DEG. F
C	2	EXHAUST 2	403.69	DEG. F
C	3	EXHAUST 3	393.91	DEG. F
C	4	EXHAUST 4	443.83	DEG. F
C	5	EXHAUST 5	454.23	DEG. F
C	6	EXHAUST 6	414.55	DEG. F
C	7	ENG. COOL. IN	144.48	DEG. F
C	8	ENG. COOL. OUT	179.34	DEG. F
C	9	OIL SUMP	192.23	DEG. F
C	10	WATER TEMP/HEAD	182.85	DEG. F
C	11	OIL COOLER IN	193.12	DEG. F
C	12	OIL COOLER OUT	182.96	DEG. F
C	13	ENG. INTAKE	143.69	DEG. F
C	14	RAD. TOP LEFT	135.12	DEG. F
C	15	RAD. BTTM LEFT	132.65	DEG. F
C	16	RAD. TOP RIGHT	134.42	DEG. F
C	17	RAD. BTTM RIGHT	138.91	DEG. F
C	18	GEN. AIR IN	118.78	DEG. F
C	19	GEN. AIR OUT	138.27	DEG. F
C	20	GEN. FRAME TOP	123.06	DEG. F
C	21	GEN. FRAME BTTM	125.04	DEG. F
C	22	GEN. EXCITER	124.99	DEG. F
C	23	GEN. VOLT. REG.	123.74	DEG. F
C	24	CONTROL PANEL	123.74	DEG. F
C	25	RELAY AREA	120.02	DEG. F
C	26	BATTERY LEFT	134.47	DEG. F
C	27	BATTERY RIGHT	136.64	DEG. F
C	28	AIR IN SET	120.63	DEG. F
C	29	FUEL TANK	127.52	DEG. F
C	30	FUEL OUTLET	139.48	DEG. F

END SCAN GROUP 1 04 JAN 88 17:18:19

STOPPED SINGLE SCAN 04 JAN 88 17:18:19

BEGIN SCAN GROUP 1 04 JAN 88 17:20:24
60 KW 60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	419.35	DEG. F
C	2	EXHAUST 2	384.88	DEG. F
C	3	EXHAUST 3	386.69	DEG. F
C	4	EXHAUST 4	422.54	DEG. F
C	5	EXHAUST 5	438.43	DEG. F
C	6	EXHAUST 6	392.68	DEG. F
C	7	ENG. COOL. IN	144.26	DEG. F
C	8	ENG. COOL. OUT	179.22	DEG. F
C	9	OIL SUMP	192.11	DEG. F
C	10	WATER TEMP/HEAD	183.01	DEG. F
C	11	OIL COOLER IN	192.34	DEG. F
C	12	OIL COOLER OUT	182.48	DEG. F
C	13	ENG. INTAKE	141.76	DEG. F
C	14	RAD. TOP LEFT	134.32	DEG. F
C	15	RAD. BTTM LEFT	131.73	DEG. F
C	16	RAD. TOP RIGHT	133.27	DEG. F
C	17	RAD. BTTM RIGHT		OPEN TC
C	18	GEN. AIR IN	116.27	DEG. F
C	19	GEN. AIR OUT	129.03	DEG. F
C	20	GEN. FRAME TOP	122.59	DEG. F
C	21	GEN. FRAME BTTM	124.42	DEG. F
C	22	GEN. EXCITER	125.65	DEG. F
C	23	GEN. VOLT. REG.	123.62	DEG. F
C	24	CONTROL PANEL	123.47	DEG. F
C	25	RELAY AREA	119.72	DEG. F
C	26	BATTERY LEFT	134.71	DEG. F
C	27	BATTERY RIGHT	136.93	DEG. F
C	28	AIR IN SET	118.15	DEG. F
C	29	FUEL TANK	127.16	DEG. F
C	30	FUEL OUTLET	139.11	DEG. F

END SCAN GROUP 1 04 JAN 88 17:20:34

STOPPED SINGLE SCAN 04 JAN 88 17:20:34

BEGIN SCAN GROUP 1 04 JAN 88 17:22:0
60 KW 60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	458.07	DEG. F
C	2	EXHAUST 2	419.93	DEG. F
C	3	EXHAUST 3	417.61	DEG. F
C	4	EXHAUST 4	447.26	DEG. F
C	5	EXHAUST 5	458.66	DEG. F
C	6	EXHAUST 6	416.17	DEG. F
C	7	ENG. COOL. IN	144.79	DEG. F
C	8	ENG. COOL. OUT	179.02	DEG. F
C	9	OIL SUMP	191.00	DEG. F
C	10	WATER TEMP/HEAD	182.45	DEG. F
C	11	OIL COOLER IN	192.38	DEG. F
C	12	OIL COOLER OUT	182.46	DEG. F
C	13	ENG. INTAKE	145.59	DEG. F
C	14	RAD. TOP LEFT	135.37	DEG. F
C	15	RAD. BTTM LEFT	132.83	DEG. F
C	16	RAD. TOP RIGHT	134.25	DEG. F
C	17	RAD. BTTM RIGHT	136.72	DEG. F
C	18	GEN. AIR IN	116.67	DEG. F
C	19	GEN. AIR OUT	129.19	DEG. F
C	20	GEN. FRAME TOP	122.78	DEG. F
C	21	GEN. FRAME BTTM	124.25	DEG. F
C	22	GEN. EXCITER	125.99	DEG. F
C	23	GEN. VOLT. REG.	123.44	DEG. F
C	24	CONTROL PANEL	123.27	DEG. F
C	25	RELAY AREA	120.29	DEG. F
C	26	BATTERY LEFT	135.00	DEG. F
C	27	BATTERY RIGHT	137.17	DEG. F
C	28	AIR IN SET	119.93	DEG. F
C	29	FUEL TANK	126.99	DEG. F
C	30	FUEL OUTLET	139.06	DEG. F

END SCAN GROUP 1 04 JAN 88 17:22:1.

STOPPED SINGLE SCAN 04 JAN 88 17:22:1.

BEGIN SCAN GROUP 1 04 JAN 88 17:26:4
60 KW 60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	606.42	DEG. F
C	2	EXHAUST 2	564.51	DEG. F
C	3	EXHAUST 3	586.47	DEG. F
C	4	EXHAUST 4	625.65	DEG. F
C	5	EXHAUST 5	626.53	DEG. F
C	6	EXHAUST 6	568.06	DEG. F
C	7	ENG. COOL. IN	154.04	DEG. F
C	8	ENG. COOL. OUT	182.95	DEG. F
C	9	OIL SUMP	195.04	DEG. F
C	10	WATER TEMP/HEAD	187.32	DEG. F
C	11	OIL COOLER IN	196.52	DEG. F
C	12	OIL COOLER OUT	186.42	DEG. F
C	13	ENG. INTAKE	157.29	DEG. F
C	14	RAD. TOP LEFT	137.28	DEG. F
C	15	RAD. BTTM LEFT	134.33	DEG. F
C	16	RAD. TOP RIGHT	135.28	DEG. F
C	17	RAD. BTTM RIGHT		OPEN TC
C	18	GEN. AIR IN	115.69	DEG. F
C	19	GEN. AIR OUT	128.53	DEG. F
C	20	GEN. FRAME TOP	122.58	DEG. F
C	21	GEN. FRAME BTTM	123.78	DEG. F
C	22	GEN. EXCITER	126.64	DEG. F
C	23	GEN. VOLT. REG.	123.78	DEG. F
C	24	CONTROL PANEL	123.29	DEG. F
C	25	RELAY AREA	120.72	DEG. F
C	26	BATTERY LEFT	136.49	DEG. F
C	27	BATTERY RIGHT	138.81	DEG. F
C	28	AIR IN SET	119.02	DEG. F
C	29	FUEL TANK	126.93	DEG. F
C	30	FUEL OUTLET	137.96	DEG. F

END SCAN GROUP 1 04 JAN 88 17:26:5

STOPPED SINGLE SCAN 04 JAN 88 17:26:5

BEGIN SCAN GROUP 1 04 JAN 88 17:30:01
60 KW 60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	745.45	DEG. F
C	2	EXHAUST 2	739.74	DEG. F
C	3	EXHAUST 3	758.18	DEG. F
C	4	EXHAUST 4	760.44	DEG. F
C	5	EXHAUST 5	754.86	DEG. F
C	6	EXHAUST 6	737.37	DEG. F
C	7	ENG. COOL. IN	166.44	DEG. F
C	8	ENG. COOL. OUT	186.24	DEG. F
C	9	OIL SUMP	199.45	DEG. F
C	10	WATER TEMP/HEAD	196.58	DEG. F
C	11	OIL COOLER IN	201.83	DEG. F
C	12	OIL COOLER OUT	191.35	DEG. F
C	13	ENG. INTAKE	173.72	DEG. F
C	14	RAD. TOP LEFT	141.99	DEG. F
C	15	RAD. BTTM LEFT	138.78	DEG. F
C	16	RAD. TOP RIGHT	138.94	DEG. F
C	17	RAD. BTTM RIGHT	OPEN	TC
C	18	GEN. AIR IN	120.64	DEG. F
C	19	GEN. AIR OUT	131.04	DEG. F
C	20	GEN. FRAME TOP	124.00	DEG. F
C	21	GEN. FRAME BTTM	125.12	DEG. F
C	22	GEN. EXCITER	128.10	DEG. F
C	23	GEN. VOLT. REG.	124.12	DEG. F
C	24	CONTROL PANEL	123.76	DEG. F
C	25	RELAY AREA	122.75	DEG. F
C	26	BATTERY LEFT	139.28	DEG. F
C	27	BATTERY RIGHT	141.66	DEG. F
C	28	AIR IN SET	123.71	DEG. F
C	29	FUEL TANK	127.17	DEG. F
C	30	FUEL OUTLET	137.57	DEG. F

END SCAN GROUP 1 04 JAN 88 17:30:11

STOPPED SINGLE SCAN 04 JAN 88 17:30:11

BEGIN SCAN GROUP 1 04 JAN 88 17:35:17
60 KW 60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	892.88	DEG. F
C	2	EXHAUST 2	895.93	DEG. F
C	3	EXHAUST 3	900.34	DEG. F
C	4	EXHAUST 4	924.47	DEG. F
C	5	EXHAUST 5	912.97	DEG. F
C	6	EXHAUST 6	900.53	DEG. F
C	7	ENG. COOL. IN	180.50	DEG. F
C	8	ENG. COOL. OUT	193.10	DEG. F
C	9	OIL SUMP	207.32	DEG. F
C	10	WATER TEMP/HEAD	197.38	DEG. F
C	11	OIL COOLER IN	211.29	DEG. F
C	12	OIL COOLER OUT	199.51	DEG. F
C	13	ENG. INTAKE	195.92	DEG. F
C	14	RAD. TOP LEFT	145.22	DEG. F
C	15	RAD. BTTM LEFT	141.07	DEG. F
C	16	RAD. TOP RIGHT	138.91	DEG. F
C	17	RAD. BTTM RIGHT	OPEN	TC
C	18	GEN. AIR IN	117.98	DEG. F
C	19	GEN. AIR OUT	131.66	DEG. F
C	20	GEN. FRAME TOP	124.39	DEG. F
C	21	GEN. FRAME BTTM	125.22	DEG. F
C	22	GEN. EXCITER	129.00	DEG. F
C	23	GEN. VOLT. REG.	125.20	DEG. F
C	24	CONTROL PANEL	124.95	DEG. F
C	25	RELAY AREA	123.83	DEG. F
C	26	BATTERY LEFT	145.88	DEG. F
C	27	BATTERY RIGHT	148.55	DEG. F
C	28	AIR IN SET	121.62	DEG. F
C	29	FUEL TANK	128.17	DEG. F
C	30	FUEL OUTLET	138.20	DEG. F

END SCAN GROUP 1 04 JAN 88 17:35:27

STOPPED SINGLE SCAN 04 JAN 88 17:35:27

BEGIN SCAN GROUP 1 04 JAN 88 17:41:29
60 KW 60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	1054.9	DEG. F
C	2	EXHAUST 2	1058.4	DEG. F
C	3	EXHAUST 3	1091.8	DEG. F
C	4	EXHAUST 4	1120.3	DEG. F
C	5	EXHAUST 5	1088.4	DEG. F
C	6	EXHAUST 6	1054.7	DEG. F
C	7	ENG. COOL. IN	182.83	DEG. F
C	8	ENG. COOL. OUT	196.47	DEG. F
C	9	OIL SUMP	207.84	DEG. F
C	10	WATER TEMP/HEAD	200.60	DEG. F
C	11	OIL COOLER IN	215.85	DEG. F
C	12	OIL COOLER OUT	202.25	DEG. F
C	13	ENG. INTAKE	224.57	DEG. F
C	14	RAD. TOP LEFT	144.05	DEG. F
C	15	RAD. BTTM LEFT	140.28	DEG. F
C	16	RAD. TOP RIGHT	138.28	DEG. F
C	17	RAD. BTTM RIGHT	OPEN	TC
C	18	GEN. AIR IN	121.14	DEG. F
C	19	GEN. AIR OUT	133.41	DEG. F
C	20	GEN. FRAME TOP	122.71	DEG. F
C	21	GEN. FRAME BTTM	122.71	DEG. F
C	22	GEN. EXCITER	127.65	DEG. F
C	23	GEN. VOLT. REG.	125.26	DEG. F
C	24	CONTROL PANEL	124.92	DEG. F
C	25	RELAY AREA	122.47	DEG. F
C	26	BATTERY LEFT	145.82	DEG. F
C	27	BATTERY RIGHT	148.45	DEG. F
C	28	AIR IN SET	123.74	DEG. F
C	29	FUEL TANK	129.21	DEG. F
C	30	FUEL OUTLET	138.07	DEG. F

END SCAN GROUP 1 04 JAN 88 17:41:39

STOPPED SINGLE SCAN 04 JAN 88 17:41:39

TEST DATA

ITEM 60 Kw / 60 Hz
GENERATOR SET
MODIFIED
MFGR. KURZ & KNUT
MODEL NO. MEP 006A
SERIAL NO. DZO 2785

National Technical Systems | Scientific Services Group | Testing Division, P.O. Box 38, Hartwood, Virginia 22471, Tel 703 752 5300

FREQUENCY AND VOLTAGE STABILITY TEST (LONG TERM)

REF. NO. MIL-STD 705: 608.2
SHEET 1 OF 2
DATE 5 JAN 1989
JOB NO. 555-2140
PROJ. ENGR.
RECORDER/OBSERVER BJ/Km/Gc

INST TIME	STEP NO.	LOAD STEP	E60280 VOLTAGE L_1-L_0 VAC	L_2-L_0 VAC	L_3-L_0 VAC	E60400 AMPERES x80 L_1-L_0 AC AMPS	L_2-L_0 AC AMPS	L_3-L_0 AC AMPS	E62300 KILOWATTS x80 L_1-L_0 Kw	L_2-L_0 Kw	L_3-L_0 Kw	E62420 POWER FACTOR PF	E62410 FREQ. Hz	E61670 EXCITER VOLTS VDC	E62480 FIELD AMPS DCA	AMB. TEMP. °F	
0721			STARTED UNIT TO			RUN	LONG	TERM	LOAD								
0746			START STABILIZATION														
0746		R/L	120	120	120	2.54	2.55	2.55	.25	.251	.251	.80	59.7	13.8	3.35	123	15.5/15.5
0750		R/L	120	120	120	2.55	2.56	2.56	.25	.251	.251	.80	59.6	13.6	3.4	121	15.6/15.5
0800		R/L	120	120	120	2.55	2.56	2.56	.25	.25	.251	.80	59.5	13.8	3.45	123	15.5/15.8
0810		R/L	120	120	120	2.55	2.56	2.56	.25	.251	.251	.80	59.6	13.9	3.5	123	15.3/15.5
0810			ADJUSTED	FREQ	ENCY												~~15.6/15.5~~
0820		R/L	120	120	120	2.54	2.55	2.55	.25	251	.251	.80	600	13.7	3.4	121	15.6/15.5
0830		R/L	120	120	120	2.54	2.55	2.55	.25	.251	.251	.80	60.1	13.8	3.41	121	15.5/15.7
0840		R/L	120	120	120	2.54	2.55	2.55	.25	.251	.251	.80	60.0	13.9	3.45	121	15.6/15.6
0850		R/L	120	120	120	2.54	2.55	2.55	.25	.251	.251	.80	600	13.9	3.45	121	15.7/15.5
0851			PERFORM SHORT TERM STABILITY AT			RATED LOAD											
0852		R/L	120	120	120	2.54	2.55	2.55	.25	.251	.251	.80	60.0	13.9	3.49	122	15.8/15.5
0850			START LONG TERM			AT RATED LOAD											
0921		R/L	120	120	120	2.54	2.55	2.55	.25	.251	.251	.80	60.0	13.9	3.5	121	15.9/15.5
0950		R/L	120	120	120	2.54	2.55	2.55	.25	.251	.251	.80	60.0	13.9	3.5	120	15.6/15.6
1020		R/L	120	120	120	2.54	2.55	2.56	.25	.251	.251	.80	60.0	14.0	3.5	119	15.9/15.6
1050		R/L	120	120	120	2.55	2.56	2.56	.25	.251	.251	.80	59.9	14.0	3.5	120	15.8/15.0
1120		R/L	120	120	120	2.55	2.56	2.56	.25	.251	.251	.80	59.9	14.0	3.5	119	15.7/15.6
1150		R/L	120	120	120	2.55	2.56	2.56	.25	.251	.251	.80	59.8	14.0	3.5	121	15.9/15.6
1220		R/L	120	120	120	2.54	2.55	2.55	.25	.251	.251	.80	59.8	14.0	3.5	120	15.8/15.5
1250		R/L	120	120	120	2.54	2.55	2.55	.25	251	.251	.80	59.8	14.0	3.5	119	15.8/15.5
1253			REMOVED LOAD FROM			UNIT START STABILIZATION			AT	NO LOAD							
1300		N/L	121.1	121.1	121.1								61.3	5.6	1.3	119	1.9/6.1
1310		N/L	121.1	121.1	121.1								61.3	5.4	1.3	120	1.7/6.6
1320		N/L	121.1	121.1	121.1								61.35	5.3	1.28	121	1.7/6.5

NOTES: FAILED TEST - OUT OF SPEC ON FREQ REGULATION, FREQ UNDERSHOOT AND FREQ RECOVERY TIME

TEST DATA

ITEM 60 KW / 60 HZ GENERATOR SET MODIFIED
MFGR. KURZ & ROOT
MODEL NO. MEP 006A
SERIAL NO. D20 2785

NTS
National Technical Systems
Scientific Services Group
Testing Division
P.O. Box 38
Hartwood, Virginia 22471
Tel. 703 752 5300

FREQUENCY AND VOLTAGE STABILITY TEST (LONG TERM)

REF. NO. MIL-STD 705: 608.2
SHEET 2 OF 2
DATE 5 JAN 1988
JOB NO. 555-2140
PROJ. ENGR.
RECORDER/OBSERVER KM/BT/GC

INST TIME	STEP NO.	LOAD STEP	E6628 O VOLTAGE L_1-L_0 VAC	L_2-L_0 VAC	L_3-L_0 VAC	E6040 D AMPERES L_1-L_0 AC AMPS	L_2-L_0 AC AMPS	L_3-L_0 AC AMPS	E6230 D KILOWATTS L_1-L_0 Kw	L_2-L_0 Kw	L_3-L_0 Kw	E6241D POWER FACTOR PF	E6241D FREQ. Hz	E6167D EXCITER VOLTS VDC	E6248D FIELD AMPS DCA	AMB. TEMP. °F	IN EXH
1330		NIL	121.1	121.1	121.1								61.35	5.2	1.25	120	1.7/66
			PERFORM SHORT TERM STABILITY AT NO LOAD														
1332		NIL	121.1	121.1	121.1								61.4	5.2	1.25	121	1.7/66
1330			START	EQUIP	TERM	AT	NO	LOAD									
1400		NIL	121.1	121.1	121.1								61.3	5.2	1.22	117	1.7/66
1430		NIL	121.1	121.1	121.1								61.3	5.2	1.25	119	1.7/66
1500		NIL	121.1	121.1	121.1								61.3	5.2	1.25	120	1.7/66
1530		NIL	121.1	121.1	121.1								61.2	5.2	1.22	119	1.7/66
1600		NIL	121.1	121.1	121.1								61.2	5.25	1.3	120 119	1.7/66
1630		NIL	121.1	121.1	121.1								61.2	5.2	1.25	118	1.7/65
1700		NIL	121.1	121.1	121.1								61.2	5.3	1.25	121	1.7/66
1730		NIL	121.1	121.1	121.1								61.1	5.2	1.25	120	1.7/67
		RL	120	120	120	2.56	2.57	2.57	.251	.252	.252	.80	555	12.5	3.1	120	13.5/14.7
		NIL	121.1	121.1	121.1								61.5	5.3	1.25	121	5.0/7.2
		RL	120	120	120	2.56	257	2.57	.251	.252	.252	.80	55.7	12.6	3.15	122	13.8/15.2
		NIL	121.1	121.1	121.1								61.6	5.3	1.3	121	3.3/7.3
		RL	120	120	120	2.55	2.56	2.56	.25	.251	.252	.80	55.7	12.7	3.25	121	14.3/15.3
1737		NIL	121.1	121.1	121.1								61.5	5.4	1.3	121	3.4/7.4
1738			END OF TEST			SHUT UNIT DOWN											

NOTES:

TEST DATA

ITEM 60KW 60Hz GENERATOR SET MODIFIED

MFGR. KURZ & ROOT

MODEL NO. MEP 006A

SERIAL NO. 02 0 2285

National Technical Systems | Scientific Services Group | Testing Division, PO Box 38, Hartwood, Virginia 22471, Tel 703 752 5300

FREQUENCY AND VOLTAGE Stability (Long Term) Method 608.2

REF. NO. MIL-STD-705

SHEET 1 OF 1

DATE 5 JAN 1988

JOB NO. 555 2140

PROJ. ENGR.

RECORDER/OBSERVER

	FREQUENCY								VOLTAGE							
	MAXIMUM EXCURSION				REC.	CONSTANT LOAD ± BANDWIDTH		REGULATION	MAXIMUM EXCURSION				REC.	CONSTANT LOAD ± BANDWIDTH		
LOAD STEP	OVERSHOOT		UNDERSHOOT		TIME				OVERSHOOT		UNDERSHOOT		TIME			
	Hz	%	Hz	%	SEC	Hz	%	FREQ. %	VOLT.	%	VOLT.	%	SEC.	VOLT.	%	
R/C	SHORT TERM STABILIZATION					.10	.17							.17	.15	
R/C	LONG TERM STABILIZATION					.23	.38							.35	.29	
N/C	SHORT TERM STABILIZATION					.07	.12							.17	.15	
N/C	LONG TERM STABILIZATION					.16	.26							.26	.22	
						SHORT TERM LOAD CHANGES										
1						.09	.15							.17	.15	
1 - 2			3.79	6.31	4.69			2.66	.91			6.42	5.35	.23		
2						.21	.35							.17	.15	
2 - 3	1.8	3.01			.63			3.93	91	9.03	7.52			.23		
3						.12	.20							.17	.15	
3 - 4			3.51	5.86	3.67			3.0	.91			5.38	4.49	.39		
4						.14	.23							.17	.15	
4 - 5	1.62	2.78			.63			3.16	.91	5.20	4.34			.38		
5						.09	.15							.17	.15	
5 - 6			3.26	5.44	3.28			3.16	.91			5.04	4.20	.23		
6						.16	.26							.17	.15	
	1.60	2.66			.28			3.0	.91	7.12	5.93			.23		

NOTES:

5A-5

Freq and voltage Stability Test, Method 608.2

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BEGIN SCAN GROUP 1    05 JAN 88  07:40:16
60 KW 60HZ GEN SET S/N DZO 2785

C    1 EXHAUST 1          1074.0 DEG. F
C    2 EXHAUST 2          1073.0 DEG. F
C    3 EXHAUST 3          1108.6 DEG. F
C    4 EXHAUST 4          1145.2 DEG. F
C    5 EXHAUST 5          1125.9 DEG. F
C    6 EXHAUST 6          1079.1 DEG. F
C    7 ENG. COOL. IN       187.93 DEG. F
C    8 ENG. COOL. OUT      203.17 DEG. F
C    9 OIL SUMP            215.94 DEG. F
C   10 WATER TEMP/HEAD     208.92 DEG. F
C   11 OIL COOLER IN       223.87 DEG. F
C   12 OIL COOLER OUT      209.59 DEG. F
C   13  ENG. INTAKE        223.51 DEG. F
C   14 RAD. TOP LEFT       145.49 DEG. F
C   15 RAD. BTTM LEFT      137.66 DEG. F
C   16 RAD. TOP RIGHT      132.15 DEG. F
C   17 RAD. BTTM RIGHT            OPEN TC
C   18 GEN. AIR IN         116.99 DEG. F
C   19 GEN. AIR OUT        125.80 DEG. F
C   20 GEN. FRAME TOP      117.94 DEG. F
C   21 GEN. FRAME BTTM     112.44 DEG. F
C   22 GEN. EXCITER        124.44 DEG. F
C   23 GEN. VOLT. REG.     107.94 DEG. F
C   24 CONTROL PANEL       105.95 DEG. F
C   25 RELAY AREA          122.80 DEG. F
C   26 BATTERY LEFT        136.90 DEG. F
C   27 BATTERY RIGHT       139.07 DEG. F
C   28 AIR IN SET          123.44 DEG. F
C   29 FUEL TANK           80.476 DEG. F
C   30 FUEL OUTLET         113.50 DEG. F

END SCAN GROUP 1      05 JAN 88  07:40:26

STOPPED SINGLE SCAN   05 JAN 88  07:40:26
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BEGIN SCAN GROUP 1    05 JAN 88  08:00:1
60 KW 60HZ GEN SET S/N DZO 2785

C    1 EXHAUST 1          1103.6 DEG. F
C    2 EXHAUST 2          1099.4 DEG. F
C    3 EXHAUST 3          1143.2 DEG. F
C    4 EXHAUST 4          1165.6 DEG. F
C    5 EXHAUST 5          1147.7 DEG. F
C    6 EXHAUST 6          1109.8 DEG. F
C    7 ENG. COOL. IN       195.80 DEG. F
C    8 ENG. COOL. OUT      211.93 DEG. F
C    9 OIL SUMP            227.66 DEG. F
C   10 WATER TEMP/HEAD     218.16 DEG. F
C   11 OIL COOLER IN       234.07 DEG. F
C   12 OIL COOLER OUT      218.85 DEG. F
C   13  ENG. INTAKE        236.08 DEG. F
C   14 RAD. TOP LEFT       158.35 DEG. F
C   15 RAD. BTTM LEFT      141.45 DEG. F
C   16 RAD. TOP RIGHT      136.92 DEG. F
C   17 RAD. BTTM RIGHT            OPEN TC
C   18 GEN. AIR IN         116.24 DEG. F
C   19 GEN. AIR OUT        133.56 DEG. F
C   20 GEN. FRAME TOP      125.46 DEG. F
C   21 GEN. FRAME BTTM     117.99 DEG. F
C   22 GEN. EXCITER        130.65 DEG. F
C   23 GEN. VOLT. REG.     121.74 DEG. F
C   24 CONTROL PANEL       120.76 DEG. F
C   25 RELAY AREA          126.03 DEG. F
C   26 BATTERY LEFT        145.02 DEG. F
C   27 BATTERY RIGHT       147.70 DEG. F
C   28 AIR IN SET          123.07 DEG. F
C   29 FUEL TANK           84.126 DEG. F
C   30 FUEL OUTLET         131.82 DEG. F

END SCAN GROUP 1      05 JAN 88  08:00:2

STOPPED SINGLE SCAN   05 JAN 88  08:00:2
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BEGIN SCAN GROUP 1    05 JAN 88  07:50:34
60 KW 60HZ GEN SET S/N DZO 2785

C    1 EXHAUST 1          1090.5 DEG. F
C    2 EXHAUST 2          1092.2 DEG. F
C    3 EXHAUST 3          1127.5 DEG. F
C    4 EXHAUST 4          1156.2 DEG. F
C    5 EXHAUST 5          1142.9 DEG. F
C    6 EXHAUST 6          1097.7 DEG. F
C    7 ENG. COOL. IN       192.89 DEG. F
C    8 ENG. COOL. OUT      208.68 DEG. F
C    9 OIL SUMP            222.15 DEG. F
C   10 WATER TEMP/HEAD     214.89 DEG. F
C   11 OIL COOLER IN       231.56 DEG. F
C   12 OIL COOLER OUT      216.00 DEG. F
C   13  ENG. INTAKE        233.39 DEG. F
C   14 RAD. TOP LEFT       147.60 DEG. F
C   15 RAD. BTTM LEFT      139.26 DEG. F
C   16 RAD. TOP RIGHT      134.41 DEG. F
C   17 RAD. BTTM RIGHT            OPEN TC
C   18 GEN. AIR IN         114.78 DEG. F
C   19 GEN. AIR OUT        130.07 DEG. F
C   20 GEN. FRAME TOP      121.78 DEG. F
C   21 GEN. FRAME BTTM     114.94 DEG. F
C   22 GEN. EXCITER        128.06 DEG. F
C   23 GEN. VOLT. REG.     117.34 DEG. F
C   24 CONTROL PANEL       116.15 DEG. F
C   25 RELAY AREA          123.25 DEG. F
C   26 BATTERY LEFT        142.22 DEG. F
C   27 BATTERY RIGHT       145.06 DEG. F
C   28 AIR IN SET          121.71 DEG. F
C   29 FUEL TANK           82.228 DEG. F
C   30 FUEL OUTLET         125.99 DEG. F

END SCAN GROUP 1      05 JAN 88  07:50:44

STOPPED SINGLE SCAN   05 JAN 88  07:50:45
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BEGIN SCAN GROUP 1    05 JAN 88  08:10:2
60 KW 60HZ GEN SET S/N DZO 2785

C    1 EXHAUST 1          1089.3 DEG. F
C    2 EXHAUST 2          1099.4 DEG. F
C    3 EXHAUST 3          1130.9 DEG. F
C    4 EXHAUST 4          1160.7 DEG. F
C    5 EXHAUST 5          1150.4 DEG. F
C    6 EXHAUST 6          1113.7 DEG. F
C    7 ENG. COOL. IN       195.97 DEG. F
C    8 ENG. COOL. OUT      212.08 DEG. F
C    9 OIL SUMP            227.50 DEG. F
C   10 WATER TEMP/HEAD     218.23 DEG. F
C   11 OIL COOLER IN       235.07 DEG. F
C   12 OIL COOLER OUT      219.48 DEG. F
C   13  ENG. INTAKE        235.51 DEG. F
C   14 RAD. TOP LEFT       149.90 DEG. F
C   15 RAD. BTTM LEFT      141.01 DEG. F
C   16 RAD. TOP RIGHT      137.18 DEG. F
C   17 RAD. BTTM RIGHT            OPEN TC
C   18 GEN. AIR IN         113.84 DEG. F
C   19 GEN. AIR OUT        134.86 DEG. F
C   20 GEN. FRAME TOP      125.96 DEG. F
C   21 GEN. FRAME BTTM     118.65 DEG. F
C   22 GEN. EXCITER        130.38 DEG. F
C   23 GEN. VOLT. REG.     123.53 DEG. F
C   24 CONTROL PANEL       123.24 DEG. F
C   25 RELAY AREA          125.05 DEG. F
C   26 BATTERY LEFT        145.88 DEG. F
C   27 BATTERY RIGHT       148.39 DEG. F
C   28 AIR IN SET          121.58 DEG. F
C   29 FUEL TANK           86.173 DEG. F
C   30 FUEL OUTLET         132.32 DEG. F

END SCAN GROUP 1      05 JAN 88  08:10:3

STOPPED SINGLE SCAN   05 JAN 88  08:10:3
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BEGIN SCAN GROUP 1 05 JAN 88 08:20:24
60 KW 60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	1081.1	DEG. F
C	2	EXHAUST 2	1085.1	DEG. F
C	3	EXHAUST 3	1124.3	DEG. F
C	4	EXHAUST 4	1158.8	DEG. F
C	5	EXHAUST 5	1140.7	DEG. F
C	6	EXHAUST 6	1100.0	DEG. F
C	7	ENG. COOL. IN	194.92	DEG. F
C	8	ENG. COOL. OUT	211.00	DEG. F
C	9	OIL SUMP	227.32	DEG. F
C	10	WATER TEMP/HEAD	217.20	DEG. F
C	11	OIL COOLER IN	234.74	DEG. F
C	12	OIL COOLER OUT	218.83	DEG. F
C	13	ENG. INTAKE	233.97	DEG. F
C	14	RAD. TOP LEFT	148.58	DEG. F
C	15	RAD. BTTM LEFT	140.11	DEG. F
C	16	RAD. TOP RIGHT	136.88	DEG. F
C	17	RAD. BTTM RIGHT	140.76	DEG. F
C	18	GEN. AIR IN	113.58	DEG. F
C	19	GEN. AIR OUT	135.87	DEG. F
C	20	GEN. FRAME TOP	125.71	DEG. F
C	21	GEN. FRAME BTTM	118.68	DEG. F
C	22	GEN. EXCITER	129.68	DEG. F
C	23	GEN. VOLT. REG.	124.20	DEG. F
C	24	CONTROL PANEL	123.78	DEG. F
C	25	RELAY AREA	123.93	DEG. F
C	26	BATTERY LEFT	145.76	DEG. F
C	27	BATTERY RIGHT	148.44	DEG. F
C	28	AIR IN SET	121.09	DEG. F
C	29	FUEL TANK	88.287	DEG. F
C	30	FUEL OUTLET	133.57	DEG. F

END SCAN GROUP 1 05 JAN 88 08:20:34

STOPPED SINGLE SCAN 05 JAN 88 08:20:34

BEGIN SCAN GROUP 1 05 JAN 88 08:30:00
60 KW 60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	1089.7	DEG. F
C	2	EXHAUST 2	1096.1	DEG. F
C	3	EXHAUST 3	1122.3	DEG. F
C	4	EXHAUST 4	1159.9	DEG. F
C	5	EXHAUST 5	1144.5	DEG. F
C	6	EXHAUST 6	1100.9	DEG. F
C	7	ENG. COOL. IN	194.89	DEG. F
C	8	ENG. COOL. OUT	210.79	DEG. F
C	9	OIL SUMP	226.80	DEG. F
C	10	WATER TEMP/HEAD	217.16	DEG. F
C	11	OIL COOLER IN	234.45	DEG. F
C	12	OIL COOLER OUT	218.60	DEG. F
C	13	ENG. INTAKE	234.58	DEG. F
C	14	RAD. TOP LEFT	148.89	DEG. F
C	15	RAD. BTTM LEFT	140.20	DEG. F
C	16	RAD. TOP RIGHT	136.95	DEG. F
C	17	RAD. BTTM RIGHT		OPEN TC
C	18	GEN. AIR IN	113.60	DEG. F
C	19	GEN. AIR OUT	136.32	DEG. F
C	20	GEN. FRAME TOP	125.91	DEG. F
C	21	GEN. FRAME BTTM	119.03	DEG. F
C	22	GEN. EXCITER	129.33	DEG. F
C	23	GEN. VOLT. REG.	124.28	DEG. F
C	24	CONTROL PANEL	123.72	DEG. F
C	25	RELAY AREA	124.04	DEG. F
C	26	BATTERY LEFT	146.01	DEG. F
C	27	BATTERY RIGHT	148.85	DEG. F
C	28	AIR IN SET	121.54	DEG. F
C	29	FUEL TANK	90.250	DEG. F
C	30	FUEL OUTLET	136.31	DEG. F

END SCAN GROUP 1 05 JAN 88 08:30:11

STOPPED SINGLE SCAN 05 JAN 88 08:30:11

BEGIN SCAN GROUP 1 05 JAN 88 08:40:3
60 KW 60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	1086.6	DEG. F
C	2	EXHAUST 2	1095.8	DEG. F
C	3	EXHAUST 3	1125.5	DEG. F
C	4	EXHAUST 4	1160.2	DEG. F
C	5	EXHAUST 5	1147.2	DEG. F
C	6	EXHAUST 6	1099.8	DEG. F
C	7	ENG. COOL. IN	195.36	DEG. F
C	8	ENG. COOL. OUT	211.41	DEG. F
C	9	OIL SUMP	227.14	DEG. F
C	10	WATER TEMP/HEAD	217.75	DEG. F
C	11	OIL COOLER IN	235.05	DEG. F
C	12	OIL COOLER OUT	219.17	DEG. F
C	13	ENG. INTAKE	235.18	DEG. F
C	14	RAD. TOP LEFT	149.14	DEG. F
C	15	RAD. BTTM LEFT	140.43	DEG. F
C	16	RAD. TOP RIGHT	137.52	DEG. F
C	17	RAD. BTTM RIGHT	142.42	DEG. F
C	18	GEN. AIR IN	113.66	DEG. F
C	19	GEN. AIR OUT	137.06	DEG. F
C	20	GEN. FRAME TOP	126.35	DEG. F
C	21	GEN. FRAME BTTM	119.74	DEG. F
C	22	GEN. EXCITER	129.61	DEG. F
C	23	GEN. VOLT. REG.	124.68	DEG. F
C	24	CONTROL PANEL	124.07	DEG. F
C	25	RELAY AREA	124.05	DEG. F
C	26	BATTERY LEFT	146.79	DEG. F
C	27	BATTERY RIGHT	149.60	DEG. F
C	28	AIR IN SET	120.82	DEG. F
C	29	FUEL TANK	92.291	DEG. F
C	30	FUEL OUTLET	135.10	DEG. F

END SCAN GROUP 1 05 JAN 88 08:40:45

STOPPED SINGLE SCAN 05 JAN 88 08:40:45

BEGIN SCAN GROUP 1 05 JAN 88 08:50:2
60 KW 60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	1086.7	DEG. F
C	2	EXHAUST 2	1095.3	DEG. F
C	3	EXHAUST 3	1126.4	DEG. F
C	4	EXHAUST 4	1157.8	DEG. F
C	5	EXHAUST 5	1147.2	DEG. F
C	6	EXHAUST 6	1098.4	DEG. F
C	7	ENG. COOL. IN	196.01	DEG. F
C	8	ENG. COOL. OUT	211.93	DEG. F
C	9	OIL SUMP	228.23	DEG. F
C	10	WATER TEMP/HEAD	218.29	DEG. F
C	11	OIL COOLER IN	235.50	DEG. F
C	12	OIL COOLER OUT	219.60	DEG. F
C	13	ENG. INTAKE	234.93	DEG. F
C	14	RAD. TOP LEFT	149.99	DEG. F
C	15	RAD. BTTM LEFT	141.16	DEG. F
C	16	RAD. TOP RIGHT	138.15	DEG. F
C	17	RAD. BTTM RIGHT		OPEN TC
C	18	GEN. AIR IN	114.91	DEG. F
C	19	GEN. AIR OUT	137.87	DEG. F
C	20	GEN. FRAME TOP	126.76	DEG. F
C	21	GEN. FRAME BTTM	119.93	DEG. F
C	22	GEN. EXCITER	129.97	DEG. F
C	23	GEN. VOLT. REG.	125.07	DEG. F
C	24	CONTROL PANEL	124.49	DEG. F
C	25	RELAY AREA	124.66	DEG. F
C	26	BATTERY LEFT	147.48	DEG. F
C	27	BATTERY RIGHT	150.08	DEG. F
C	28	AIR IN SET	121.84	DEG. F
C	29	FUEL TANK	94.135	DEG. F
C	30	FUEL OUTLET	134.21	DEG. F

END SCAN GROUP 1 05 JAN 88 08:50:3

STOPPED SINGLE SCAN 05 JAN 88 08:50:3

BEGIN SCAN GROUP 1 05 JAN 88 08:52:39
60 KW 60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	1089.6	DEG. F
C	2	EXHAUST 2	1092.9	DEG. F
C	3	EXHAUST 3	1131.3	DEG. F
C	4	EXHAUST 4	1161.2	DEG. F
C	5	EXHAUST 5	1144.7	DEG. F
C	6	EXHAUST 6	1099.3	DEG. F
C	7	ENG. COOL. IN	196.18	DEG. F
C	8	ENG. COOL. OUT	212.07	DEG. F
C	9	OIL SUMP	228.02	DEG. F
C	10	WATER TEMP/HEAD	218.23	DEG. F
C	11	OIL COOLER IN	235.60	DEG. F
C	12	OIL COOLER OUT	219.75	DEG. F
C	13	ENG. INTAKE	235.47	DEG. F
C	14	RAD. TOP LEFT	149.97	DEG. F
C	15	RAD. BTTM LEFT	140.91	DEG. F
C	16	RAD. TOP RIGHT	138.31	DEG. F
C	17	RAD. BTTM RIGHT		OPEN TC
C	18	GEN. AIR IN	114.65	DEG. F
C	19	GEN. AIR OUT	138.24	DEG. F
C	20	GEN. FRAME TOP	127.02	DEG. F
C	21	GEN. FRAME BTTM	120.17	DEG. F
C	22	GEN. EXCITER	130.30	DEG. F
C	23	GEN. VOLT. REG.	125.29	DEG. F
C	24	CONTROL PANEL	124.58	DEG. F
C	25	RELAY AREA	124.63	DEG. F
C	26	BATTERY LEFT	147.62	DEG. F
C	27	BATTERY RIGHT	150.36	DEG. F
C	28	AIR IN SET	122.01	DEG. F
C	29	FUEL TANK	94.631	DEG. F
C	30	FUEL OUTLET	136.12	DEG. F

END SCAN GROUP 1 05 JAN 88 08:52:49

STOPPED SINGLE SCAN 05 JAN 88 08:52:49

BEGIN SCAN GROUP 1 05 JAN 88 09:21:14
60 KW 60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	1088.2	DEG. F
C	2	EXHAUST 2	1092.5	DEG. F
C	3	EXHAUST 3	1129.6	DEG. F
C	4	EXHAUST 4	1157.3	DEG. F
C	5	EXHAUST 5	1146.5	DEG. F
C	6	EXHAUST 6	1098.6	DEG. F
C	7	ENG. COOL. IN	196.99	DEG. F
C	8	ENG. COOL. OUT	212.77	DEG. F
C	9	OIL SUMP	228.22	DEG. F
C	10	WATER TEMP/HEAD	219.10	DEG. F
C	11	OIL COOLER IN	236.37	DEG. F
C	12	OIL COOLER OUT	220.52	DEG. F
C	13	ENG. INTAKE	235.47	DEG. F
C	14	RAD. TOP LEFT	150.04	DEG. F
C	15	RAD. BTTM LEFT	141.36	DEG. F
C	16	RAD. TOP RIGHT	139.13	DEG. F
C	17	RAD. BTTM RIGHT		OPEN TC
C	18	GEN. AIR IN	114.25	DEG. F
C	19	GEN. AIR OUT	138.98	DEG. F
C	20	GEN. FRAME TOP	127.01	DEG. F
C	21	GEN. FRAME BTTM	121.36	DEG. F
C	22	GEN. EXCITER	129.97	DEG. F
C	23	GEN. VOLT. REG.	126.18	DEG. F
C	24	CONTROL PANEL	125.42	DEG. F
C	25	RELAY AREA	124.54	DEG. F
C	26	BATTERY LEFT	151.01	DEG. F
C	27	BATTERY RIGHT	152.01	DEG. F
C	28	AIR IN SET	121.55	DEG. F
C	29	FUEL TANK	99.652	DEG. F
C	30	FUEL OUTLET	139.07	DEG. F

END SCAN GROUP 1 05 JAN 88 09:21:24

STOPPED SINGLE SCAN 05 JAN 88 09:21:24

BEGIN SCAN GROUP 1 05 JAN 88 09:50:3
60 KW 60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	1086.6	DEG. F
C	2	EXHAUST 2	1091.3	DEG. F
C	3	EXHAUST 3	1118.8	DEG. F
C	4	EXHAUST 4	1147.4	DEG. F
C	5	EXHAUST 5	1136.7	DEG. F
C	6	EXHAUST 6	1096.0	DEG. F
C	7	ENG. COOL. IN	195.66	DEG. F
C	8	ENG. COOL. OUT	211.66	DEG. F
C	9	OIL SUMP	226.75	DEG. F
C	10	WATER TEMP/HEAD	218.07	DEG. F
C	11	OIL COOLER IN	235.95	DEG. F
C	12	OIL COOLER OUT	219.83	DEG. F
C	13	ENG. INTAKE	233.09	DEG. F
C	14	RAD. TOP LEFT	148.68	DEG. F
C	15	RAD. BTTM LEFT	139.77	DEG. F
C	16	RAD. TOP RIGHT	138.18	DEG. F
C	17	RAD. BTTM RIGHT		OPEN TC
C	18	GEN. AIR IN	114.24	DEG. F
C	19	GEN. AIR OUT	139.07	DEG. F
C	20	GEN. FRAME TOP	125.87	DEG. F
C	21	GEN. FRAME BTTM	120.51	DEG. F
C	22	GEN. EXCITER	126.74	DEG. F
C	23	GEN. VOLT. REG.	125.87	DEG. F
C	24	CONTROL PANEL	125.13	DEG. F
C	25	RELAY AREA	123.18	DEG. F
C	26	BATTERY LEFT	149.16	DEG. F
C	27	BATTERY RIGHT	151.71	DEG. F
C	28	AIR IN SET	120.07	DEG. F
C	29	FUEL TANK	104.47	DEG. F
C	30	FUEL OUTLET	136.20	DEG. F

END SCAN GROUP 1 05 JAN 88 09:50:4

STOPPED SINGLE SCAN 05 JAN 88 09:50:4

BEGIN SCAN GROUP 1 05 JAN 88 10:20:1
60 KW 60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	1094.5	DEG. F
C	2	EXHAUST 2	1093.3	DEG. F
C	3	EXHAUST 3	1131.0	DEG. F
C	4	EXHAUST 4	1159.6	DEG. F
C	5	EXHAUST 5	1149.6	DEG. F
C	6	EXHAUST 6	1101.3	DEG. F
C	7	ENG. COOL. IN	195.77	DEG. F
C	8	ENG. COOL. OUT	212.01	DEG. F
C	9	OIL SUMP	226.83	DEG. F
C	10	WATER TEMP/HEAD	218.44	DEG. F
C	11	OIL COOLER IN	235.62	DEG. F
C	12	OIL COOLER OUT	219.77	DEG. F
C	13	ENG. INTAKE	234.86	DEG. F
C	14	RAD. TOP LEFT	149.09	DEG. F
C	15	RAD. BTTM LEFT	140.19	DEG. F
C	16	RAD. TOP RIGHT	138.58	DEG. F
C	17	RAD. BTTM RIGHT		OPEN TC
C	18	GEN. AIR IN	114.35	DEG. F
C	19	GEN. AIR OUT	139.23	DEG. F
C	20	GEN. FRAME TOP	125.93	DEG. F
C	21	GEN. FRAME BTTM	120.77	DEG. F
C	22	GEN. EXCITER	128.73	DEG. F
C	23	GEN VOLT. REG.	125.20	DEG. F
C	24	CONTROL PANEL	124.32	DEG. F
C	25	RELAY AREA	123.32	DEG. F
C	26	BATTERY LEFT	148.58	DEG. F
C	27	BATTERY RIGHT	151.82	DEG. F
C	28	AIR IN SET	119.64	DEG. F
C	29	FUEL TANK	108.42	DEG. F
C	30	FUEL OUTLET	137.33	DEG. F

END SCAN GROUP 1 05 JAN 88 10:20:1

STOPPED SINGLE SCAN 05 JAN 88 10:20:1

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BEGIN SCAN GROUP 1   05 JAN 88  10:51:03
60 KW/60HZ GEN SET S/N DZO 2785

C    1 EXHAUST 1          1094.8 DEG. F
C    2 EXHAUST 2          1095.1 DEG. F
C    3 EXHAUST 3          1139.4 DEG. F
C    4 EXHAUST 4          1158.3 DEG. F
C    5 EXHAUST 5          1152.7 DEG. F
C    6 EXHAUST 6          1102.2 DEG. F
C    7 ENG. COOL. IN      196.66 DEG. F
C    8 ENG. COOL. OUT     212.80 DEG. F
C    9 OIL SUMP           227.92 DEG. F
C   10 WATER TEMP/HEAD    219.09 DEG. F
C   11 OIL COOLER IN      236.47 DEG. F
C   12 OIL COOLER OUT     220.51 DEG. F
C   13  ENG. INTAKE       235.54 DEG. F
C   14 RAD. TOP LEFT      149.74 DEG. F
C   15 RAD. BTTM LEFT     141.04 DEG. F
C   16 RAD. TOP RIGHT     139.26 DEG. F
C   17 RAD. BTTM RIGHT           OPEN TC
C   18 GEN. AIR IN        116.04 DEG. F
C   19 GEN. AIR OUT       139.69 DEG. F
C   20 GEN. FRAME TOP     126.72 DEG. F
C   21 GEN. FRAME BTTM    121.81 DEG. F
C   22 GEN. EXCITER       129.33 DEG. F
C   23 GEN. VOLT. REG.    125.72 DEG. F
C   24 CONTROL PANEL      124.82 DEG. F
C   25 RELAY AREA         124.16 DEG. F
C   26 BATTERY LEFT       150.16 DEG. F
C   27 BATTERY RIGHT      152.92 DEG. F
C   28 AIR IN SET         120.39 DEG. F
C   29 FUEL TANK          112.03 DEG. F
C   30 FUEL OUTLET        136.51 DEG. F

END SCAN GROUP 1     05 JAN 88  10:51:14

STOPPED SINGLE SCAN  05 JAN 88  10:51:14


BEGIN SCAN GROUP 1   05 JAN 88  11:20:16
60 KW 60HZ GEN SET S/N DZO 2785

C    1 EXHAUST 1          1095.3 DEG. F
C    2 EXHAUST 2          1095.5 DEG. F
C    3 EXHAUST 3          1134.3 DEG. F
C    4 EXHAUST 4          1159.7 DEG. F
C    5 EXHAUST 5          1154.1 DEG. F
C    6 EXHAUST 6          1102.0 DEG. F
C    7 ENG. COOL. IN      195.95 DEG. F
C    8 ENG. COOL. OUT     212.05 DEG. F
C    9 OIL SUMP           227.72 DEG. F
C   10 WATER TEMP/HEAD    218.33 DEG. F
C   11 OIL COOLER IN      235.95 DEG. F
C   12 OIL COOLER OUT     219.93 DEG. F
C   13  ENG. INTAKE       234.86 DEG. F
C   14 RAD. TOP LEFT      148.93 DEG. F
C   15 RAD. BTTM LEFT     139.93 DEG. F
C   16 RAD. TOP RIGHT     138.29 DEG. F
C   17 RAD. BTTM RIGHT           OPEN TC
C   18 GEN. AIR IN        111.94 DEG. F
C   19 GEN. AIR OUT       138.17 DEG. F
C   20 GEN. FRAME TOP     125.80 DEG. F
C   21 GEN. FRAME BTTM    120.56 DEG. F
C   22 GEN. EXCITER       128.53 DEG. F
C   23 GEN. VOLT. REG.    125.14 DEG. F
C   24 CONTROL PANEL      124.36 DEG. F
C   25 RELAY AREA         123.16 DEG. F
C   26 BATTERY LEFT       148.98 DEG. F
C   27 BATTERY RIGHT      153.07 DEG. F
C   28 AIR IN SET         119.33 DEG. F
C   29 FUEL TANK          115.22 DEG. F
C   30 FUEL OUTLET        139.65 DEG. F

END SCAN GROUP 1     05 JAN 88  11:20:26

STOPPED SINGLE SCAN  05 JAN 88  11:20:26


BEGIN SCAN GROUP 1   05 JAN 88  11:39:5
60 KW/60HZ GEN SET S/N DZO 2785

C    1 EXHAUST 1          1099.0 DEG. F
C    2 EXHAUST 2          1097.1 DEG. F
C    3 EXHAUST 3          1134.8 DEG. F
C    4 EXHAUST 4          1157.4 DEG. F
C    5 EXHAUST 5          1155.2 DEG. F
C    6 EXHAUST 6          1097.2 DEG. F
C    7 ENG. COOL. IN      195.68 DEG. F
C    8 ENG. COOL. OUT     211.94 DEG. F
C    9 OIL SUMP           227.01 DEG. F
C   10 WATER TEMP/HEAD    218.13 DEG. F
C   11 OIL COOLER IN      235.65 DEG. F
C   12 OIL COOLER OUT     219.66 DEG. F
C   13  ENG. INTAKE       234.88 DEG. F
C   14 RAD. TOP LEFT      148.65 DEG. F
C   15 RAD. BTTM LEFT     139.90 DEG. F
C   16 RAD. TOP RIGHT     138.39 DEG. F
C   17 RAD. BTTM RIGHT           OPEN TC
C   18 GEN. AIR IN        114.06 DEG. F
C   19 GEN. AIR OUT       138.84 DEG. F
C   20 GEN. FRAME TOP     125.74 DEG. F
C   21 GEN. FRAME BTTM    120.75 DEG. F
C   22 GEN. EXCITER       128.57 DEG. F
C   23 GEN. VOLT. REG.    125.18 DEG. F
C   24 CONTROL PANEL      124.22 DEG. F
C   25 RELAY AREA         123.17 DEG. F
C   26 BATTERY LEFT       150.22 DEG. F
C   27 BATTERY RIGHT      153.32 DEG. F
C   28 AIR IN SET         119.42 DEG. F
C   29 FUEL TANK          117.06 DEG. F
C   30 FUEL OUTLET        135.91 DEG. F

END SCAN GROUP 1     05 JAN 88  11:40:0

STOPPED SINGLE SCAN  05 JAN 88  11:40:0


BEGIN SCAN GROUP 1   05 JAN 88  11:50:1
60 KW 60HZ GEN SET S/N DZO 2785

C    1 EXHAUST 1          1100.9 DEG. F
C    2 EXHAUST 2          1098.1 DEG. F
C    3 EXHAUST 3          1136.4 DEG. F
C    4 EXHAUST 4          1158.2 DEG. F
C    5 EXHAUST 5          1152.8 DEG. F
C    6 EXHAUST 6          1096.9 DEG. F
C    7 ENG. COOL. IN      196.01 DEG. F
C    8 ENG. COOL. OUT     212.05 DEG. F
C    9 OIL SUMP           227.29 DEG. F
C   10 WATER TEMP/HEAD    218.21 DEG. F
C   11 OIL COOLER IN      235.58 DEG. F
C   12 OIL COOLER OUT     219.61 DEG. F
C   13  ENG. INTAKE       235.20 DEG. F
C   14 RAD. TOP LEFT      149.21 DEG. F
C   15 RAD. BTTM LEFT     140.40 DEG. F
C   16 RAD. TOP RIGHT     138.60 DEG. F
C   17 RAD. BTTM RIGHT           OPEN TC
C   18 GEN. AIR IN        115.96 DEG. F
C   19 GEN. AIR OUT       138.87 DEG. F
C   20 GEN. FRAME TOP     125.90 DEG. F
C   21 GEN. FRAME BTTM    120.61 DEG. F
C   22 GEN. EXCITER       128.73 DEG. F
C   23 GEN. VOLT. REG.    125.00 DEG. F
C   24 CONTROL PANEL      124.12 DEG. F
C   25 RELAY AREA         123.58 DEG. F
C   26 BATTERY LEFT       149.05 DEG. F
C   27 BATTERY RIGHT      153.54 DEG. F
C   28 AIR IN SET         121.28 DEG. F
C   29 FUEL TANK          117.91 DEG. F
C   30 FUEL OUTLET        137.91 DEG. F

END SCAN GROUP 1     05 JAN 88  11:50:1

STOPPED SINGLE SCAN  05 JAN 88  11:50:1
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BEGIN SCAN GROUP 1 05 JAN 88 12:20:16
60 KW 60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	1094.3	DEG. F
C	2	EXHAUST 2	1098.5	DEG. F
C	3	EXHAUST 3	1140.9	DEG. F
C	4	EXHAUST 4	1160.2	DEG. F
C	5	EXHAUST 5	1154.0	DEG. F
C	6	EXHAUST 6	1103.3	DEG. F
C	7	ENG. COOL. IN	196.46	DEG. F
C	8	ENG. COOL. OUT	212.42	DEG. F
C	9	OIL SUMP	227.86	DEG. F
C	10	WATER TEMP/HEAD	218.75	DEG. F
C	11	OIL COOLER IN	235.85	DEG. F
C	12	OIL COOLER OUT	220.13	DEG. F
C	13	ENG. INTAKE	234.93	DEG. F
C	14	RAD. TOP LEFT	149.03	DEG. F
C	15	RAD. BTTM LEFT	140.32	DEG. F
C	16	RAD. TOP RIGHT	138.92	DEG. F
C	17	RAD. BTTM RIGHT		OPEN TC
C	18	GEN. AIR IN	114.46	DEG. F
C	19	GEN. AIR OUT	139.16	DEG. F
C	20	GEN. FRAME TOP	126.05	DEG. F
C	21	GEN. FRAME BTTM	121.63	DEG. F
C	22	GEN. EXCITER	128.59	DEG. F
C	23	GEN. VOLT. REG.	125.27	DEG. F
C	24	CONTROL PANEL	124.54	DEG. F
C	25	RELAY AREA	123.24	DEG. F
C	26	BATTERY LEFT	158.65	DEG. F
C	27	BATTERY RIGHT	154.40	DEG. F
C	28	AIR IN SET	120.60	DEG. F
C	29	FUEL TANK	120.11	DEG. F
C	30	FUEL OUTLET	139.33	DEG. F

END SCAN GROUP 1 05 JAN 88 12:20:26

STOPPED SINGLE SCAN 05 JAN 88 12:20:26

BEGIN SCAN GROUP 1 05 JAN 88 12:50:45
60 KW 60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	1096.2	DEG. F
C	2	EXHAUST 2	1099.3	DEG. F
C	3	EXHAUST 3	1140.4	DEG. F
C	4	EXHAUST 4	1161.5	DEG. F
C	5	EXHAUST 5	1157.8	DEG. F
C	6	EXHAUST 6	1107.6	DEG. F
C	7	ENG. COOL. IN	196.71	DEG. F
C	8	ENG. COOL. OUT	212.87	DEG. F
C	9	OIL SUMP	228.94	DEG. F
C	10	WATER TEMP/HEAD	219.22	DEG. F
C	11	OIL COOLER IN	236.44	DEG. F
C	12	OIL COOLER OUT	220.49	DEG. F
C	13	ENG. INTAKE	235.43	DEG. F
C	14	RAD. TOP LEFT	149.32	DEG. F
C	15	RAD. BTTM LEFT	140.63	DEG. F
C	16	RAD. TOP RIGHT	138.97	DEG. F
C	17	RAD. BTTM RIGHT		OPEN TC
C	18	GEN. AIR IN	114.11	DEG. F
C	19	GEN. AIR OUT	138.80	DEG. F
C	20	GEN. FRAME TOP	126.21	DEG. F
C	21	GEN. FRAME BTTM	121.54	DEG. F
C	22	GEN. EXCITER	129.11	DEG. F
C	23	GEN. VOLT. REG.	125.46	DEG. F
C	24	CONTROL PANEL	124.53	DEG. F
C	25	RELAY AREA	123.62	DEG. F
C	26	BATTERY LEFT	151.40	DEG. F
C	27	BATTERY RIGHT	155.08	DEG. F
C	28	AIR IN SET	119.95	DEG. F
C	29	FUEL TANK	122.74	DEG. F
C	30	FUEL OUTLET	140.79	DEG. F

END SCAN GROUP 1 05 JAN 88 12:50:55

STOPPED SINGLE SCAN 05 JAN 88 12:50:55

BEGIN SCAN GROUP 1 05 JAN 88 13:00:1
60 KW 60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	466.13	DEG. F
C	2	EXHAUST 2	426.55	DEG. F
C	3	EXHAUST 3	431.91	DEG. F
C	4	EXHAUST 4	456.66	DEG. F
C	5	EXHAUST 5	449.14	DEG. F
C	6	EXHAUST 6	417.12	DEG. F
C	7	ENG. COOL. IN	158.61	DEG. F
C	8	ENG. COOL. OUT	179.73	DEG. F
C	9	OIL SUMP	200.11	DEG. F
C	10	WATER TEMP/HEAD	183.44	DEG. F
C	11	OIL COOLER IN	202.53	DEG. F
C	12	OIL COOLER OUT	191.83	DEG. F
C	13	ENG. INTAKE	148.79	DEG. F
C	14	RAD. TOP LEFT	139.64	DEG. F
C	15	RAD. BTTM LEFT	136.44	DEG. F
C	16	RAD. TOP RIGHT	138.05	DEG. F
C	17	RAD. BTTM RIGHT		OPEN TC
C	18	GEN. AIR IN	118.28	DEG. F
C	19	GEN. AIR OUT	134.79	DEG. F
C	20	GEN. FRAME TOP	125.37	DEG. F
C	21	GEN. FRAME BTTM	128.84	DEG. F
C	22	GEN. EXCITER	127.74	DEG. F
C	23	GEN. VOLT. REG.	125.03	DEG. F
C	24	CONTROL PANEL	124.25	DEG. F
C	25	RELAY AREA	121.19	DEG. F
C	26	BATTERY LEFT	144.83	DEG. F
C	27	BATTERY RIGHT	149.18	DEG. F
C	28	AIR IN SET	119.55	DEG. F
C	29	FUEL TANK	123.54	DEG. F
C	30	FUEL OUTLET	140.54	DEG. F

END SCAN GROUP 1 05 JAN 88 13:00:2

STOPPED SINGLE SCAN 05 JAN 88 13:00:2

BEGIN SCAN GROUP 1 05 JAN 88 13:10:1
60 KW 60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	459.10	DEG. F
C	2	EXHAUST 2	419.95	DEG. F
C	3	EXHAUST 3	428.09	DEG. F
C	4	EXHAUST 4	451.22	DEG. F
C	5	EXHAUST 5	448.48	DEG. F
C	6	EXHAUST 6	413.92	DEG. F
C	7	ENG. COOL. IN	148.97	DEG. F
C	8	ENG. COOL. OUT	179.23	DEG. F
C	9	OIL SUMP	191.91	DEG. F
C	10	WATER TEMP/HEAD	182.46	DEG. F
C	11	OIL COOLER IN	195.17	DEG. F
C	12	OIL COOLER OUT	185.11	DEG. F
C	13	ENG. INTAKE	146.65	DEG. F
C	14	RAD. TOP LEFT	137.05	DEG. F
C	15	RAD. BTTM LEFT	134.49	DEG. F
C	16	RAD. TOP RIGHT	136.13	DEG. F
C	17	RAD. BTTM RIGHT		OPEN TC
C	18	GEN. AIR IN	117.65	DEG. F
C	19	GEN. AIR OUT	131.26	DEG. F
C	20	GEN. FRAME TOP	124.62	DEG. F
C	21	GEN. FRAME BTTM	127.14	DEG. F
C	22	GEN. EXCITER	126.40	DEG. F
C	23	GEN. VOLT. REG.	123.77	DEG. F
C	24	CONTROL PANEL	123.10	DEG. F
C	25	RELAY AREA	121.27	DEG. F
C	26	BATTERY LEFT	140.09	DEG. F
C	27	BATTERY RIGHT	143.21	DEG. F
C	28	AIR IN SET	120.75	DEG. F
C	29	FUEL TANK	123.64	DEG. F
C	30	FUEL OUTLET	139.22	DEG. F

END SCAN GROUP 1 05 JAN 88 13:10:2

STOPPED SINGLE SCAN 05 JAN 88 13:10:2

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BEGIN SCAN GROUP 1   05 JAN 88  13:20:21
60 KW 60HZ GEN SET S/N DZO 2785

C    1 EXHAUST 1          461.10 DEG. F
C    2 EXHAUST 2          421.82 DEG. F
C    3 EXHAUST 3          428.78 DEG. F
C    4 EXHAUST 4          453.77 DEG. F
C    5 EXHAUST 5          442.59 DEG. F
C    6 EXHAUST 6          415.37 DEG. F
C    7 ENG. COOL. IN      150.86 DEG. F
C    8 ENG. COOL. OUT     180.16 DEG. F
C    9 OIL SUMP           192.06 DEG. F
C   10 WATER TEMP/HEAD    183.46 DEG. F
C   11 OIL COOLER IN      195.23 DEG. F
C   12 OIL COOLER OUT     185.46 DEG. F
C   13  ENG. INTAKE       148.98 DEG. F
C   14 RAD. TOP LEFT      138.08 DEG. F
C   15 RAD. BTTM LEFT     135.95 DEG. F
C   16 RAD. TOP RIGHT     136.75 DEG. F
C   17 RAD. BTTM RIGHT           OPEN TC
C   18 GEN. AIR IN        116.56 DEG. F
C   19 GEN. AIR OUT       129.63 DEG. F
C   20 GEN. FRAME TOP     124.93 DEG. F
C   21 GEN. FRAME BTTM    126.18 DEG. F
C   22 GEN. EXCITER       128.98 DEG. F
C   23 GEN. VOLT. REG.    125.03 DEG. F
C   24 CONTROL PANEL      124.17 DEG. F
C   25 RELAY AREA         123.30 DEG. F
C   26 BATTERY LEFT       141.21 DEG. F
C   27 BATTERY RIGHT      144.40 DEG. F
C   28 AIR IN SET         121.65 DEG. F
C   29 FUEL TANK          124.03 DEG. F
C   30 FUEL OUTLET        138.96 DEG. F

END SCAN GROUP 1     05 JAN 88  13:20:31

STOPPED SINGLE SCAN  05 JAN 88  13:20:31
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BEGIN SCAN GROUP 1   05 JAN 88  13:32:1
60 KW 60HZ GEN SET S/N DZO 2785

C    1 EXHAUST 1          460.32 DEG. F
C    2 EXHAUST 2          420.24 DEG. F
C    3 EXHAUST 3          427.62 DEG. F
C    4 EXHAUST 4          453.12 DEG. F
C    5 EXHAUST 5          442.59 DEG. F
C    6 EXHAUST 6          414.94 DEG. F
C    7 ENG. COOL. IN      149.60 DEG. F
C    8 ENG. COOL. OUT     179.68 DEG. F
C    9 OIL SUMP           191.37 DEG. F
C   10 WATER TEMP/HEAD    183.03 DEG. F
C   11 OIL COOLER IN      194.78 DEG. F
C   12 OIL COOLER OUT     184.89 DEG. F
C   13  ENG. INTAKE       147.98 DEG. F
C   14 RAD. TOP LEFT      136.97 DEG. F
C   15 RAD. BTTM LEFT     134.65 DEG. F
C   16 RAD. TOP RIGHT     135.62 DEG. F
C   17 RAD. BTTM RIGHT           OPEN TC
C   18 GEN. AIR IN        116.93 DEG. F
C   19 GEN. AIR OUT       128.08 DEG. F
C   20 GEN. FRAME TOP     123.64 DEG. F
C   21 GEN. FRAME BTTM    124.44 DEG. F
C   22 GEN. EXCITER       128.69 DEG. F
C   23 GEN. VOLT. REG.    125.71 DEG. F
C   24 CONTROL PANEL      124.81 DEG. F
C   25 RELAY AREA         122.32 DEG. F
C   26 BATTERY LEFT       141.23 DEG. F
C   27 BATTERY RIGHT      143.88 DEG. F
C   28 AIR IN SET         121.28 DEG. F
C   29 FUEL TANK          124.44 DEG. F
C   30 FUEL OUTLET        138.68 DEG. F

END SCAN GROUP 1     05 JAN 88  13:32:1

STOPPED SINGLE SCAN  05 JAN 88  13:32:1
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BEGIN SCAN GROUP 1   05 JAN 88  13:30:46
60 KW 60HZ GEN SET S/N DZO 2785

C    1 EXHAUST 1          458.66 DEG. F
C    2 EXHAUST 2          418.99 DEG. F
C    3 EXHAUST 3          427.57 DEG. F
C    4 EXHAUST 4          453.56 DEG. F
C    5 EXHAUST 5          442.58 DEG. F
C    6 EXHAUST 6          413.89 DEG. F
C    7 ENG. COOL. IN      149.43 DEG. F
C    8 ENG. COOL. OUT     179.74 DEG. F
C    9 OIL SUMP           192.35 DEG. F
C   10 WATER TEMP/HEAD    183.17 DEG. F
C   11 OIL COOLER IN      194.88 DEG. F
C   12 OIL COOLER OUT     184.99 DEG. F
C   13  ENG. INTAKE       147.54 DEG. F
C   14 RAD. TOP LEFT      136.62 DEG. F
C   15 RAD. BTTM LEFT     134.42 DEG. F
C   16 RAD. TOP RIGHT     135.36 DEG. F
C   17 RAD. BTTM RIGHT           OPEN TC
C   18 GEN. AIR IN        116.57 DEG. F
C   19 GEN. AIR OUT       127.79 DEG. F
C   20 GEN. FRAME TOP     123.03 DEG. F
C   21 GEN. FRAME BTTM    124.13 DEG. F
C   22 GEN. EXCITER       128.41 DEG. F
C   23 GEN. VOLT. REG.    125.78 DEG. F
C   24 CONTROL PANEL      124.77 DEG. F
C   25 RELAY AREA         121.78 DEG. F
C   26 BATTERY LEFT       141.10 DEG. F
C   27 BATTERY RIGHT      144.29 DEG. F
C   28 AIR IN SET         120.90 DEG. F
C   29 FUEL TANK          124.43 DEG. F
C   30 FUEL OUTLET        138.57 DEG. F

END SCAN GROUP 1     05 JAN 88  13:30:57

STOPPED SINGLE SCAN  05 JAN 88  13:30:57
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BEGIN SCAN GROUP 1   05 JAN 88  14:00:1
60 KW 60HZ GEN SET S/N DZO 2785

C    1 EXHAUST 1          460.31 DEG. F
C    2 EXHAUST 2          419.59 DEG. F
C    3 EXHAUST 3          427.93 DEG. F
C    4 EXHAUST 4          452.12 DEG. F
C    5 EXHAUST 5          442.37 DEG. F
C    6 EXHAUST 6          415.98 DEG. F
C    7 ENG. COOL. IN      149.16 DEG. F
C    8 ENG. COOL. OUT     179.83 DEG. F
C    9 OIL SUMP           190.17 DEG. F
C   10 WATER TEMP/HEAD    183.14 DEG. F
C   11 OIL COOLER IN      194.25 DEG. F
C   12 OIL COOLER OUT     184.34 DEG. F
C   13  ENG. INTAKE       148.46 DEG. F
C   14 RAD. TOP LEFT      136.15 DEG. F
C   15 RAD. BTTM LEFT     133.68 DEG. F
C   16 RAD. TOP RIGHT     134.61 DEG. F
C   17 RAD. BTTM RIGHT           OPEN TC
C   18 GEN. AIR IN        114.54 DEG. F
C   19 GEN. AIR OUT       126.25 DEG. F
C   20 GEN. FRAME TOP     122.79 DEG. F
C   21 GEN. FRAME BTTM    123.55 DEG. F
C   22 GEN. EXCITER       128.73 DEG. F
C   23 GEN. VOLT. REG.    125.48 DEG. F
C   24 CONTROL PANEL      124.56 DEG. F
C   25 RELAY AREA         121.99 DEG. F
C   26 BATTERY LEFT       141.08 DEG. F
C   27 BATTERY RIGHT      143.85 DEG. F
C   28 AIR IN SET         117.96 DEG. F
C   29 FUEL TANK          124.71 DEG. F
C   30 FUEL OUTLET        138.02 DEG. F

END SCAN GROUP 1     05 JAN 88  14:00:1

STOPPED SINGLE SCAN  05 JAN 88  14:00:1
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BEGIN SCAN GROUP 1 05 JAN 88 14:30:16
60 KW/60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	457.70	DEG. F
C	2	EXHAUST 2	417.50	DEG. F
C	3	EXHAUST 3	426.45	DEG. F
C	4	EXHAUST 4	450.42	DEG. F
C	5	EXHAUST 5	440.94	DEG. F
C	6	EXHAUST 6	414.37	DEG. F
C	7	ENG. COOL. IN	148.16	DEG. F
C	8	ENG. COOL. OUT	179.25	DEG. F
C	9	OIL SUMP	190.22	DEG. F
C	10	WATER TEMP/HEAD	182.62	DEG. F
C	11	OIL COOLER IN	193.51	DEG. F
C	12	OIL COOLER OUT	183.75	DEG. F
C	13	ENG. INTAKE	147.54	DEG. F
C	14	RAD. TOP LEFT	136.04	DEG. F
C	15	RAD. BTTM LEFT	133.77	DEG. F
C	16	RAD. TOP RIGHT	134.33	DEG. F
C	17	RAD. BTTM RIGHT		OPEN TC
C	18	GEN. AIR IN	114.92	DEG. F
C	19	GEN. AIR OUT	124.65	DEG. F
C	20	GEN. FRAME TOP	121.77	DEG. F
C	21	GEN. FRAME BTTM	122.06	DEG. F
C	22	GEN. EXCITER	127.81	DEG. F
C	23	GEN. VOLT. REG.	124.97	DEG. F
C	24	CONTROL PANEL	124.19	DEG. F
C	25	RELAY AREA	121.97	DEG. F
C	26	BATTERY LEFT	139.76	DEG. F
C	27	BATTERY RIGHT	142.86	DEG. F
C	28	AIR IN SET	119.22	DEG. F
C	29	FUEL TANK	125.34	DEG. F
C	30	FUEL OUTLET	137.43	DEG. F

END SCAN GROUP 1 05 JAN 88 14:30:26

STOPPED SINGLE SCAN 05 JAN 88 14:30:26

BEGIN SCAN GROUP 1 05 JAN 88 15:00:15
60 KW/60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	458.51	DEG. F
C	2	EXHAUST 2	417.77	DEG. F
C	3	EXHAUST 3	427.60	DEG. F
C	4	EXHAUST 4	449.85	DEG. F
C	5	EXHAUST 5	441.52	DEG. F
C	6	EXHAUST 6	412.67	DEG. F
C	7	ENG. COOL. IN	148.31	DEG. F
C	8	ENG. COOL. OUT	179.40	DEG. F
C	9	OIL SUMP	188.90	DEG. F
C	10	WATER TEMP/HEAD	182.70	DEG. F
C	11	OIL COOLER IN	193.56	DEG. F
C	12	OIL COOLER OUT	183.81	DEG. F
C	13	ENG. INTAKE	147.64	DEG. F
C	14	RAD. TOP LEFT	136.44	DEG. F
C	15	RAD. BTTM LEFT	134.14	DEG. F
C	16	RAD. TOP RIGHT	134.70	DEG. F
C	17	RAD. BTTM RIGHT		OPEN TC
C	18	GEN. AIR IN	115.74	DEG. F
C	19	GEN. AIR OUT	124.75	DEG. F
C	20	GEN. FRAME TOP	121.74	DEG. F
C	21	GEN. FRAME BTTM	121.94	DEG. F
C	22	GEN. EXCITER	128.22	DEG. F
C	23	GEN. VOLT. REG.	125.31	DEG. F
C	24	CONTROL PANEL	124.46	DEG. F
C	25	RELAY AREA	122.18	DEG. F
C	26	BATTERY LEFT	140.38	DEG. F
C	27	BATTERY RIGHT	143.00	DEG. F
C	28	AIR IN SET	120.93	DEG. F
C	29	FUEL TANK	126.12	DEG. F
C	30	FUEL OUTLET	137.35	DEG. F

END SCAN GROUP 1 05 JAN 88 15:00:25

STOPPED SINGLE SCAN 05 JAN 88 15:00:25

BEGIN SCAN GROUP 1 05 JAN 88 15:30:1
60 KW/60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	456.77	DEG. F
C	2	EXHAUST 2	417.65	DEG. F
C	3	EXHAUST 3	427.33	DEG. F
C	4	EXHAUST 4	450.67	DEG. F
C	5	EXHAUST 5	439.69	DEG. F
C	6	EXHAUST 6	411.35	DEG. F
C	7	ENG. COOL. IN	148.08	DEG. F
C	8	ENG. COOL. OUT	179.29	DEG. F
C	9	OIL SUMP	190.97	DEG. F
C	10	WATER TEMP/HEAD	182.55	DEG. F
C	11	OIL COOLER IN	193.46	DEG. F
C	12	OIL COOLER OUT	183.72	DEG. F
C	13	ENG. INTAKE	147.44	DEG. F
C	14	RAD. TOP LEFT	135.94	DEG. F
C	15	RAD. BTTM LEFT	133.88	DEG. F
C	16	RAD. TOP RIGHT	134.22	DEG. F
C	17	RAD. BTTM RIGHT		OPEN TC
C	18	GEN. AIR IN	114.88	DEG. F
C	19	GEN. AIR OUT	124.17	DEG. F
C	20	GEN. FRAME TOP	121.57	DEG. F
C	21	GEN. FRAME BTTM	121.69	DEG. F
C	22	GEN. EXCITER	128.02	DEG. F
C	23	GEN. VOLT. REG.	125.29	DEG. F
C	24	CONTROL PANEL	124.44	DEG. F
C	25	RELAY AREA	122.21	DEG. F
C	26	BATTERY LEFT	140.34	DEG. F
C	27	BATTERY RIGHT	142.84	DEG. F
C	28	AIR IN SET	119.87	DEG. F
C	29	FUEL TANK	126.95	DEG. F
C	30	FUEL OUTLET	137.25	DEG. F

END SCAN GROUP 1 05 JAN 88 15:30:2

STOPPED SINGLE SCAN 05 JAN 88 15:30:2

BEGIN SCAN GROUP 1 05 JAN 88 16:00:1
60 KW/60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	457.41	DEG. F
C	2	EXHAUST 2	418.01	DEG. F
C	3	EXHAUST 3	427.58	DEG. F
C	4	EXHAUST 4	451.83	DEG. F
C	5	EXHAUST 5	442.83	DEG. F
C	6	EXHAUST 6	413.02	DEG. F
C	7	ENG. COOL. IN	148.07	DEG. F
C	8	ENG. COOL. OUT	179.51	DEG. F
C	9	OIL SUMP	190.07	DEG. F
C	10	WATER TEMP/HEAD	182.82	DEG. F
C	11	OIL COOLER IN	193.37	DEG. F
C	12	OIL COOLER OUT	183.60	DEG. F
C	13	ENG. INTAKE	147.77	DEG. F
C	14	RAD. TOP LEFT	136.32	DEG. F
C	15	RAD. BTTM LEFT	133.93	DEG. F
C	16	RAD. TOP RIGHT	134.51	DEG. F
C	17	RAD. BTTM RIGHT		OPEN TC
C	18	GEN. AIR IN	116.32	DEG. F
C	19	GEN. AIR OUT	124.66	DEG. F
C	20	GEN. FRAME TOP	121.87	DEG. F
C	21	GEN. FRAME BTTM	121.70	DEG. F
C	22	GEN. EXCITER	128.15	DEG. F
C	23	GEN. VOLT. REG.	125.19	DEG. F
C	24	CONTROL PANEL	124.34	DEG. F
C	25	RELAY AREA	122.36	DEG. F
C	26	BATTERY LEFT	139.98	DEG. F
C	27	BATTERY RIGHT	142.74	DEG. F
C	28	AIR IN SET	119.98	DEG. F
C	29	FUEL TANK	127.54	DEG. F
C	30	FUEL OUTLET	137.33	DEG. F

END SCAN GROUP 1 05 JAN 88 16:00:1

STOPPED SINGLE SCAN 05 JAN 88 16:00:1

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BEGIN SCAN GROUP 1    05 JAN 88  16:30:16
60 KW 60HZ GEN SET S/N DZO 2785

C    1 EXHAUST 1          455.60 DEG. F
C    2 EXHAUST 2          419.04 DEG. F
C    3 EXHAUST 3          428.97 DEG. F
C    4 EXHAUST 4          451.58 DEG. F
C    5 EXHAUST 5          441.38 DEG. F
C    6 EXHAUST 6          413.42 DEG. F
C    7 ENG. COOL. IN      147.81 DEG. F
C    8 ENG. COOL. OUT     179.26 DEG. F
C    9 OIL SUMP           190.80 DEG. F
C   10 WATER TEMP/HEAD    182.43 DEG. F
C   11 OIL COOLER IN      193.27 DEG. F
C   12 OIL COOLER OUT     183.49 DEG. F
C   13  ENG. INTAKE       147.46 DEG. F
C   14 RAD. TOP LEFT      135.93 DEG. F
C   15 RAD. BTTM LEFT     133.64 DEG. F
C   16 RAD. TOP RIGHT     133.98 DEG. F
C   17 RAD. BTTM RIGHT           OPEN TC
C   18 GEN. AIR IN        114.51 DEG. F
C   19 GEN. AIR OUT       124.05 DEG. F
C   20 GEN. FRAME TOP     121.52 DEG. F
C   21 GEN. FRAME BTTM    121.52 DEG. F
C   22 GEN. EXCITER       126.16 DEG. F
C   23 GEN. VOLT. REG.    125.28 DEG. F
C   24 CONTROL PANEL      124.36 DEG. F
C   25 RELAY AREA         121.96 DEG. F
C   26 BATTERY LEFT       139.85 DEG. F
C   27 BATTERY RIGHT      142.54 DEG. F
C   28 AIR IN SET         118.52 DEG. F
C   29 FUEL TANK          128.18 DEG. F
C   30 FUEL OUTLET        137.27 DEG. F

END SCAN GROUP 1      05 JAN 88  16:30:26

STOPPED SINGLE SCAN  05 JAN 88  16:30:26


BEGIN SCAN GROUP 1    05 JAN 88  17:00:13
60 KW 60HZ GEN SET S/N DZO 2785

C    1 EXHAUST 1          456.07 DEG. F
C    2 EXHAUST 2          418.93 DEG. F
C    3 EXHAUST 3          429.52 DEG. F
C    4 EXHAUST 4          453.19 DEG. F
C    5 EXHAUST 5          443.38 DEG. F
C    6 EXHAUST 6          414.18 DEG. F
C    7 ENG. COOL. IN      148.33 DEG. F
C    8 ENG. COOL. OUT     179.61 DEG. F
C    9 OIL SUMP           190.46 DEG. F
C   10 WATER TEMP/HEAD    182.70 DEG. F
C   11 OIL COOLER IN      193.54 DEG. F
C   12 OIL COOLER OUT     183.73 DEG. F
C   13  ENG. INTAKE       148.22 DEG. F
C   14 RAD. TOP LEFT      136.63 DEG. F
C   15 RAD. BTTM LEFT     134.33 DEG. F
C   16 RAD. TOP RIGHT     134.74 DEG. F
C   17 RAD. BTTM RIGHT           OPEN TC
C   18 GEN. AIR IN        115.91 DEG. F
C   19 GEN. AIR OUT       124.73 DEG. F
C   20 GEN. FRAME TOP     122.32 DEG. F
C   21 GEN. FRAME BTTM    122.24 DEG. F
C   22 GEN. EXCITER       128.79 DEG. F
C   23 GEN. VOLT. REG.    125.52 DEG. F
C   24 CONTROL PANEL      124.62 DEG. F
C   25 RELAY AREA         122.63 DEG. F
C   26 BATTERY LEFT       140.18 DEG. F
C   27 BATTERY RIGHT      142.72 DEG. F
C   28 AIR IN SET         121.14 DEG. F
C   29 FUEL TANK          128.73 DEG. F
C   30 FUEL OUTLET        137.36 DEG. F

END SCAN GROUP 1      05 JAN 88  17:00:24

STOPPED SINGLE SCAN  05 JAN 88  17:00:24
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BEGIN SCAN GROUP 1   05 JAN 88  17:30:20
60 KW 60HZ GEN SET S/N DZO 2785

C    1 EXHAUST 1          454.31 DEG. F
C    2 EXHAUST 2          417.37 DEG. F
C    3 EXHAUST 3          429.42 DEG. F
C    4 EXHAUST 4          452.47 DEG. F
C    5 EXHAUST 5          445.57 DEG. F
C    6 EXHAUST 6          414.67 DEG. F
C    7 ENG. COOL. IN      147.82 DEG. F
C    8 ENG. COOL. OUT     179.34 DEG. F
C    9 OIL SUMP           189.64 DEG. F
C   10 WATER TEMP/HEAD    182.43 DEG. F
C   11 OIL COOLER IN      193.34 DEG. F
C   12 OIL COOLER OUT     183.68 DEG. F
C   13  ENG. INTAKE       147.53 DEG. F
C   14 RAD. TOP LEFT      136.23 DEG. F
C   15 RAD. BTTM LEFT     133.90 DEG. F
C   16 RAD. TOP RIGHT     134.29 DEG. F
C   17 RAD. BTTM RIGHT           OPEN TC
C   18 GEN. AIR IN        115.47 DEG. F
C   19 GEN. AIR OUT       124.41 DEG. F
C   20 GEN. FRAME TOP     121.89 DEG. F
C   21 GEN. FRAME BTTM    121.91 DEG. F
C   22 GEN. EXCITER       128.31 DEG. F
C   23 GEN. VOLT. REG.    125.70 DEG. F
C   24 CONTROL PANEL      124.82 DEG. F
C   25 RELAY AREA         122.11 DEG. F
C   26 BATTERY LEFT       139.73 DEG. F
C   27 BATTERY RIGHT      142.69 DEG. F
C   28 AIR IN SET         120.49 DEG. F
C   29 FUEL TANK          123.33 DEG. F
C   30 FUEL OUTLET        137.37 DEG. F

END SCAN GROUP 1      05 JAN 88  17:30:30

STOPPED SINGLE SCAN  05 JAN 88  17:30:30
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TEST DATA

ITEM 60 KW / 60 Hz
GENERATOR SET
MODIFIED
MFGR. KURZ & ROOT
MODEL NO. MEP 006A
SERIAL NO. D20 2785

NTS
National Technical Systems Scientific Services Group
Testing Division P.O. Box 38 Hallwood, Virginia 22471 Tel. 703 752 5300

608.1 SHORT TERM FREQUENCY AND VOLTAGE REGULATION, STABILITY AND TRANSIENT RESPONSE TEST

REF. NO. MIL-STD 705
SHEET 1 OF 2
DATE 31 DEC. 1987
JOB NO. 555-2140
PROJ. ENGR.
RECORDER/OBSERVER KM/EC

INST TIME	STEP NO.	LOAD STEP	E6020D VOLTAGE L_1-L_0 VAC	L_2-L_0 VAC	L_3-L_0 VAC	E6040D AMPERES x 80 L_1-L_0 AC AMPS	L_2-L_0 AC AMPS	L_3-L_0 AC AMPS	E6230D KILOWATTS x 80 L_1-L_0 Kw	L_2-L_0 Kw	L_3-L_0 Kw	E6242D POWER FACTOR PF	E6241D FREQ. Hz	E6167D EXCITER VOLTS VDC	E6248D FIELD AMPS DCA	AMB. TEMP. °F	PRESS mrkd/cal/IN unit
0838			START UNIT NO LOAD														
0846			APPLIED RATED														
0852			START STABILIZATION			FOR 608.1											
0854		R/L	119.9	120	119.9	2.53	2.54	2.54	.249	.249	.25	.80	600	12.6	3.2	124	15.5 15.4
0905		R/L	119.8	119.8	119.5	2.52	2.54	2.54	.249	.249	.25	.80	598	13.2	3.3	125	15.5 15.5
0915		R/L	119.9	119.8	119.8	2.53	2.54	2.54	.249	249	.25	.80	598	13.6	3.4	124	15.5 15.5
0925		R/L	119.9	119.9	119.6	2.53	2.54	2.54	.247	.249	.25	.80	597	13.7	3.42	124	15.5 15.3
0930	1	R/L	119.5	119.5	119.9	253	2.54	2.54	.245	.249	.25	.50	598	13.6	3.42		
	2	N/L	121.5	121.1	121								60.4	5.6	1.4		
	3	R/L	119.9	119.9	119.5	2.54	2.55	2.54	.249	.25	.25	.80	596	13.6	3.4		
	4	N/L	121.1	121.1	121								61.5	5.8	1.4		
	5	R/L	119.9	119.9	119.9	2.54	2.55	2.55	.249	.25	.251	.80	597	13.5	3.4		
	6	N/L	121.1	121.	121								61.3	5.8	1.4		
	7	R/L	119.9	119.9/120	120	2.54	2.55	2.55	.245	.25	.251	.80	597	13.4	3.4		
	8	N/L	121.2	121.2	121.1								61.5	5.8	1.4		
	9	3/4	120.1	120.1	120.1	1.9	1.91	1.91	.188	.189	.189	.80	60.6	11.0	2.75		
	10	N/L	121.1	121.1	121.1								61.2	5.8	1.4		
	11	3/4	120.1	120.1	120.1	1.91	1.91	1.91	.187	.188	.188	.80	60.6	11.0	2.75		
	12	N/L	121.1	121.1	121.2								60.2	5.65	1.38		
	13	3/4	120.1	120.1	120.1	1.9	1.91	1.91	.187	.188	.188	.80	60.5	10.9	2.75		
	14	N/L	121.1	121.1	121.1								61.3	5.76	1.36		
	15	1/2	120.5	120.5	120.5	1.32	1.33	1.32	.126	.128	.129	.80	60.1	9.0	2.21		
	16	N/L	121.1	121.1	121.1								61.2	5.6	1.35		
	17	1/2	120.5	120.6	120.8	1.32	1.35	1.34	.126	.128	.129	.80	60.7	9.0	2.25		
	18	N/L	121.2	121.2	121.2								61.25	5.6	1.35		
	19	1/2	120.5	120.6	120.5	1.32	1.35	1.34	.126	.128	.129	.80	60.7	9.0	2.21		

NOTES: OUT OF SPEC ON FREQ ~~REGULATION~~, UNDERSHOOT AND RECOVERY TIME @ RATED LOAD

TEST DATA

ITEM 60 Kw / 60 Hz GENERATOR SET MODIFIED

MFGR. Kurz & Root

MODEL NO. MEP 006A

SERIAL NO. D30 2785

NTS

National Technical Systems | Scientific Services Group | Testing Division P.O. Box 38 Hartwood, Virginia 22471 Tel: 703 752 5300

608.1 SHORT TERM FREQUENCY AND VOLTAGE REGULATION, STABILITY AND TRANSIENT RESPONSE TEST

REF. NO. MIL-STD 705

SHEET 2 OF 2

DATE 31 DEC. 1987

JOB NO. 555-2140

PROJ. ENGR.

RECORDER/OBSERVER KM/GC

INST TIME	STEP NO.	LOAD STEP	E6028D VOLTAGE L_1-L_0 VAC	L_2-L_0 VAC	L_3-L_0 VAC	E6040D AMPERES x 80 L_1-L_0 AC AMPS	L_2-L_0 AC AMPS	L_3-L_0 AC AMPS	E6230D KILOWATTS x 80 L_1-L_0 Kw	L_2-L_0 Kw	L_3-L_0 Kw	E6242D POWER FACTOR PF	E6241D FREQ. Hz	E6167D EXCITER VOLTS VDC	E6248D FIELD AMPS DCA	AMB. TEMP. °F	Press inches/Gal/ IN WATER
	20	N/L	121.5	121.5	121.4								61.2	5.58	1.32		
	21	Y4	121.1	121	121	.67	.67	.67	.064	.066	.066	.80	60.8	7.2	2.25		
	22	N/L	121.4	121.4	121.5								61.2	5.5	1.3		
	23	Y4	121.1	121.1	121.1	.68	.68	.68	.065	.066	.066	.80	60.8	7.2	2.25		
	24	N/L	121.5	121.5	121.5								61.2	5.5	1.3		
	25	Y4	121.1	121.1	121	.68	.68	.68	.065	.066	.068	.80	60.8	7.2	2.25		
	26	N/L	121.5	121.5	121.5								61.1	5.4	1.3		
	27	R/L	120	120	120	2.54	2.55	2.55	.249	.25	.251	.80	59.6	12.9	3.2		
	28	N/L	121.5	121.5	121.5								61.4	5.4	1.3		
	29	R/L	120	120	120	2.54	2.55	2.55	.249	.25	.25	.80	59.6	13.0	3.21		
	30	N/L	121.5	121.5	121.5								61.3	5.4	1.3		
	31	R/L	120	120	120	254	2.55	2.55	.249	.25	.25	.80	59.7	13.0	3.21		
	32	N/L	121.5	121.5	121.5								61.4	5.4	1.3		
1001			END	OF	TEST	SHUT	UNIT	DOWN									

15-8

NOTES:

TEST DATA

ITEM 60 KW 60 Hz GENERATOR SET MODIFIED

MFGR. KURZ & ROOT

MODEL NO. MEP 006 A

SERIAL NO. 02 Ø 2785

NTS

National Technical Systems | Scientific Services Group | Testing Division, PO Box 38, Hardwood, Virginia 22471, Tel 703 752 5300

FREQUENCY AND VOLTAGE REGULATION, STABILITY, AND TRANSIENT RESPONSE TEST (SHORT TERM) 6008.1

REF. NO. MIL STD 705

SHEET 1 OF 3

DATE 31 DEC 1987

JOB NO. 555-2140

PROJ. ENGR.

RECORDER/OBSERVER GC/RS.

	FREQUENCY								VOLTAGE								
	MAXIMUM EXCURSION				REC.	CONSTANT LOAD BANDWIDTH		REGULATION	MAXIMUM EXCURSION				REC.	CONSTANT LOAD BANDWIDTH		TEMP 125°C
LOAD STEP	OVERSHOOT Hz	OVERSHOOT %	UNDERSHOOT Hz	UNDERSHOOT %	TIME SEC	Hz	%	FREQ. %	VOLT %	OVERSHOOT VOLT	OVERSHOOT %	UNDERSHOOT VOLT	UNDERSHOOT %	TIME SEC	VOLT	%	
1						.14	.23								.26	.22	
1 - 2	1.70	2.84			.7			2.66	91	7.20	7.67			.23			
2						.10	.17								.09	.07	
2 - 3			2.16	5.39	3.28			3.0	91			1.91	1.59	.31			
3						.09	.15								.17	.15	
3 - 4	1.70	2.84			.63			2.83	91	9.38	7.81			.23			
4						.09	.15								.17	.15	
4 - 5			3.19	5.32	3.36			2.66	91			7.29	6.08	.23			
5						.09	.15								.17	.15	
5 - 6	1.39	2.32			.55			2.66	91	9.38	7.81			.23			
6						.09	.15								.09	.07	
6 - 7			3.33	5.56	3.28			2.66	83			4.51	3.76	.23			
7						.10	.17								.17	.15	
7 - 8	1.30	2.84			.47			2.66	91	9.38	7.81			.16			
8						.09	.15								.17	.15	
8 - 9			1.53	2.55	.86			1.16	83			2.78	2.32	.16			
9						.09	.15								.09	.07	
9 - 10	1.15	1.91			.55			1.0	83	5.90	4.92			.08			
10						.07	.12								.17	.15	
10 - 11			1.46	2.43	.86			1.0	83			2.60	2.17	.08			
11						.09	.15								.09	.07	
11 - 12	1.74	2.89			.47			1.0	91	6.25	5.21			.16			
12						.09	.15								.17	.15	
12 - 13			1.46	2.43	.78			.57	91			3.47	2.89	.16			
13						.09	.15								.17	.15	
13 - 14	1.11	1.85			.47			1.33	83	6.42	5.35			.16			

NOTES:

TEST DATA

ITEM 60 (W) 60 Hz
GENERATOR SET
MODIFIED
MFGR.
MODEL NO. MEP 006A
SERIAL NO. 020 2285

NTS
National Technical Systems
Scientific Services Group
Testing Division
PO Box 38
Hallwood, Virginia 22471
Tel: 703 752 5300

FREQUENCY AND VOLTAGE REGULATION, STABILITY, AND TRANSIENT RESPONSE TEST (SHORT TERM) 608.1

REF. NO. MIL-STD-705
SHEET 2 OF 3
DATE 31 DEC 1982
JOB NO. 335-2140
PROJ. ENGR.
RECORDER/OBSERVER GC/RS

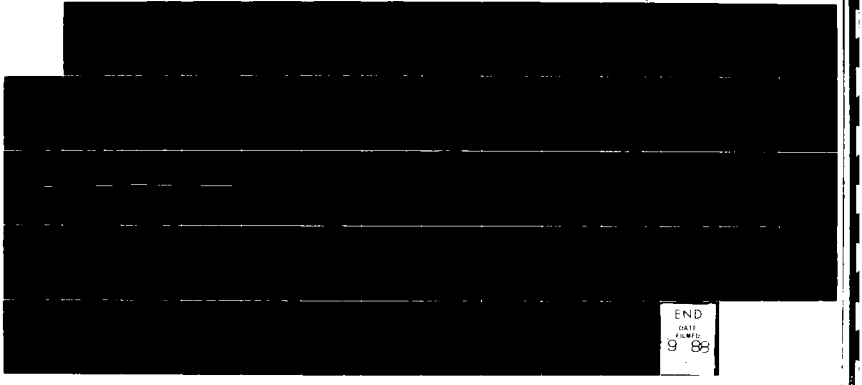
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	MAXIMUM EXCURSION				REG.	CONSTANT LOAD BANDWIDTH		REGULATION	MAXIMUM EXCURSION				REG.	CONSTANT LOAD BANDWIDTH		Transient 125°C
LOAD STEP	OVERSHOOT Hz	OVERSHOOT %	UNDERSHOOT Hz	UNDERSHOOT %	TIME SEC	Hz	%	FREQ. %	VOLT %	OVERSHOOT VOLT	OVERSHOOT %	UNDERSHOOT VOLT	UNDERSHOOT %	TIME SEC	VOLT	%	
14						.07	.12								12	15	
14-15			.26	1.27	.47			1.0	.50			2.26	1.88	.16			
15						.09	.15								.09	.07	
15-16	.73	1.22			.31			.83	50	3.13	2.60			.16			
16						.07	.12								.17	.15	
16-17			.94	1.56	.47			.83	.25			1.39	1.16	.09			
17						.07	.12								.17	15	
17-18	.69	1.16			.39			.91	.33	2.60	2.17			.09			
18						.10	.17								.17	.15	
18-19			.94	1.56	.55			.91	.25			2.26	1.88	.17			
19						.09	.15								.17	15	
19-20	.80	1.33			.47			.83	.75	2.78	2.32			.08			
20						.09	.15								.17	.15	
20-21			.31	.52	0			.66	.33			.52	.43	0			
21						.07	.12								.09	.07	
21-22	.21	.35			0			.66	.33	1.04	.87			0			
22						.09	.15								.17	15	
22-23			.38	.63	0			.66	.33			.69	.58	0			
23						.07	.12								.17	.15	
23-24	.33	.58			0			.66	.33	.82	.72			0			
24						.05	.09								.17	.15	
24-25			.38	.64	0			.66	.41			.82	.72	0			
25						.07	.12								.26	.22	
25-26	.33	.57			0			0.50	.41	1.04	.87			0			
26						.07	.12								.17	.15	
26-27			3.13	5.21	3.13			2.50	1.25			5.38	4.49	.31			

NOTES:

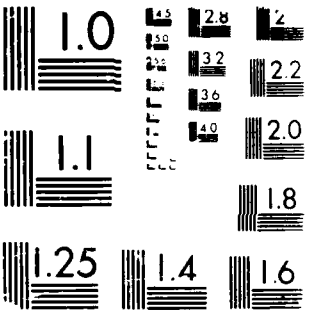
15-E

AD-A197 015 MILITARY STANDARD GENERATORS PROTOTYPE MODIFICATIONS VOLUME 3 60 KW DOD C...(U) USE CORP ALEXANDRIA VA ARMY SYSTEMS DIV R J ADOLPH ET AL. 31 MAR 88 2/2

UNCLASSIFIED USE/ASD-0008-88/15RD-VOL-3 DAAK70-86-D-0023 F/G 10/2 NL



END
DATE FILMED
9 88



MICROCOPY RESOLUTION TEST CHAR

TEST DATA

ITEM 60KW 60HZ GENERATOR SET MODIFIED

MFGR.

MODEL NO. MEP 006A

SERIAL NO. 020 2785

NTS

National Technical Systems — Scientific Services Group — Testing Division, P.O. Box 38, Harlwood, Virginia 22471, tel: 703 752 5300

FREQUENCY AND VOLTAGE REGULATION, STABILITY, AND TRANSIENT RESPONSE TEST (SHORT TERM) 608.1

REF. NO. MIL STD 705

SHEET 3 OF 3

DATE 31 DEC 1987

JOB NO. 5-5-5-2140

PROJ. ENGR.

RECORDER/OBSERVER EC/RS.

	FREQUENCY								VOLTAGE							TEMP 125°F
	MAXIMUM EXCURSION				REC.	CONSTANT LOAD BANDWIDTH		REGULATION	MAXIMUM EXCURSION				REC.	CONSTANT LOAD BANDWIDTH		
LOAD	OVERSHOOT		UNDERSHOOT		TIME			FREQ.	VOLT	OVERSHOOT		UNDERSHOOT		TIME			
STEP	Hz	%	Hz	%	SEC	Hz	%	%	%	VOLT	%	VOLT	%	SEC	VOLT	%
27						.09	.15								.17	.15
27-28	1.63	2.70			.70			3.0	1.25	4.2	2.67			.23		
28						.10	.17								.17	.15
28-29			3.26	5.44	3.75			3.0	1.25			3.99	3.33	.23		
29						.12	.20								.17	.15
29-30	1.70	2.84			.63			2.83	1.25	6.94	5.79			.23		
30						.10	.17								.17	.15
30-31			3.35	5.61	2.03			2.66	1.25			5.73	4.77	.23		
31						.07	.12								.17	.15
31-32	1.70	2.84			.70			2.83	1.25	8.10	6.80			.23		
32						.12	.23								.17	.15

NOTES:

STAGE STABILIZATION FOR 60HZ

BEGIN SCAN GROUP 1 31 DEC 87 08:38:49
60 KW 60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	390.76	DEG. F
C	2	EXHAUST 2	364.38	DEG. F
C	3	EXHAUST 3	363.72	DEG. F
C	4	EXHAUST 4	401.75	DEG. F
C	5	EXHAUST 5	388.14	DEG. F
C	6	EXHAUST 6	358.67	DEG. F
C	7	ENG. COOL. IN	81.207	DEG. F
C	8	ENG. COOL. OUT	86.926	DEG. F
C	9	OIL SUMP	85.293	DEG. F
C	11	OIL COOLER IN	88.349	DEG. F
C	12	OIL COOLER OUT	87.049	DEG. F
C	13	ENG. INTAKE	106.11	DEG. F
C	14	RAD. TOP LEFT	102.77	DEG. F
C	15	RAD. BTTM LEFT	101.37	DEG. F
C	16	RAD. TOP RIGHT	99.813	DEG. F
C	17	RAD. BTTM RIGHT	99.865	DEG. F
C	18	GEN. AIR IN	102.92	DEG. F
C	19	GEN. AIR OUT	99.487	DEG. F
C	20	GEN. FRAME TOP	93.374	DEG. F
C	21	GEN. FRAME BTTM	89.495	DEG. F
C	22	GEN. EXCITER	89.596	DEG. F
C	23	GEN. VOLT. REG.	85.808	DEG. F
C	24	CONTROL PANEL	85.301	DEG. F
C	25	RELAY AREA	96.023	DEG. F
C	26	BATTERY LEFT	87.057	DEG. F
C	27	BATTERY RIGHT	86.828	DEG. F
C	28	AIR IN SET	106.35	DEG. F
C	29	FUEL TANK	80.007	DEG. F
C	30	FUEL OUTLET	87.233	DEG. F

END SCAN GROUP 1 31 DEC 87 08:38:59

STOPPED SINGLE SCAN 31 DEC 87 08:38:59

BEGIN SCAN GROUP 1 31 DEC 87 09:05:1
60 KW 60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	1097.9	DEG. F
C	2	EXHAUST 2	1096.2	DEG. F
C	3	EXHAUST 3	1135.0	DEG. F
C	4	EXHAUST 4	1159.5	DEG. F
C	5	EXHAUST 5	1146.1	DEG. F
C	6	EXHAUST 6	1094.0	DEG. F
C	7	ENG. COOL. IN	197.41	DEG. F
C	8	ENG. COOL. OUT	213.19	DEG. F
C	9	OIL SUMP	230.69	DEG. F
C	11	OIL COOLER IN	235.20	DEG. F
C	12	OIL COOLER OUT	220.09	DEG. F
C	13	ENG. INTAKE	237.85	DEG. F
C	14	RAD. TOP LEFT	152.72	DEG. F
C	15	RAD. BTTM LEFT	143.46	DEG. F
C	16	RAD. TOP RIGHT	138.56	DEG. F
C	17	RAD. BTTM RIGHT	144.54	DEG. F
C	18	GEN. AIR IN	120.15	DEG. F
C	19	GEN. AIR OUT	132.43	DEG. F
C	20	GEN. FRAME TOP	125.49	DEG. F
C	21	GEN. FRAME BTTM	118.95	DEG. F
C	22	GEN. EXCITER	132.40	DEG. F
C	23	GEN. VOLT. REG.	121.06	DEG. F
C	24	CONTROL PANEL	119.54	DEG. F
C	25	RELAY AREA	128.54	DEG. F
C	26	BATTERY LEFT	145.07	DEG. F
C	27	BATTERY RIGHT	146.65	DEG. F
C	28	AIR IN SET	125.62	DEG. F
C	29	FUEL TANK	111.35	DEG. F
C	30	FUEL OUTLET	127.28	DEG. F

END SCAN GROUP 1 31 DEC 87 09:05:2

STOPPED SINGLE SCAN 31 DEC 87 09:05:3

BEGIN SCAN GROUP 1 31 DEC 87 08:54:49
60 KW 60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	1079.5	DEG. F
C	2	EXHAUST 2	1076.7	DEG. F
C	3	EXHAUST 3	1112.7	DEG. F
C	4	EXHAUST 4	1134.1	DEG. F
C	5	EXHAUST 5	1125.3	DEG. F
C	6	EXHAUST 6	1066.0	DEG. F
C	7	ENG. COOL. IN	187.40	DEG. F
C	8	ENG. COOL. OUT	202.21	DEG. F
C	9	OIL SUMP	212.64	DEG. F
C	11	OIL COOLER IN	219.10	DEG. F
C	12	OIL COOLER OUT	206.51	DEG. F
C	13	ENG. INTAKE	230.72	DEG. F
C	14	RAD. TOP LEFT	145.80	DEG. F
C	15	RAD. BTTM LEFT	138.65	DEG. F
C	16	RAD. TOP RIGHT	133.53	DEG. F
C	17	RAD. BTTM RIGHT	138.79	DEG. F
C	18	GEN. AIR IN	119.33	DEG. F
C	19	GEN. AIR OUT	125.50	DEG. F
C	20	GEN. FRAME TOP	118.60	DEG. F
C	21	GEN. FRAME BTTM	113.70	DEG. F
C	22	GEN. EXCITER	125.54	DEG. F
C	23	GEN. VOLT. REG.	110.06	DEG. F
C	24	CONTROL PANEL	108.12	DEG. F
C	25	RELAY AREA	124.24	DEG. F
C	26	BATTERY LEFT	135.30	DEG. F
C	27	BATTERY RIGHT	136.08	DEG. F
C	28	AIR IN SET	124.61	DEG. F
C	29	FUEL TANK	100.18	DEG. F
C	30	FUEL OUTLET	112.19	DEG. F

END SCAN GROUP 1 31 DEC 87 08:54:59

STOPPED SINGLE SCAN 31 DEC 87 08:54:59

BEGIN SCAN GROUP 1 31 DEC 87 09:15:1
60 KW 60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	1097.5	DEG. F
C	2	EXHAUST 2	1097.5	DEG. F
C	3	EXHAUST 3	1140.1	DEG. F
C	4	EXHAUST 4	1155.6	DEG. F
C	5	EXHAUST 5	1149.5	DEG. F
C	6	EXHAUST 6	1099.8	DEG. F
C	7	ENG. COOL. IN	198.88	DEG. F
C	8	ENG. COOL. OUT	214.85	DEG. F
C	9	OIL SUMP	233.18	DEG. F
C	11	OIL COOLER IN	237.68	DEG. F
C	12	OIL COOLER OUT	222.25	DEG. F
C	13	ENG. INTAKE	238.20	DEG. F
C	14	RAD. TOP LEFT	153.37	DEG. F
C	15	RAD. BTTM LEFT	143.83	DEG. F
C	16	RAD. TOP RIGHT	139.84	DEG. F
C	17	RAD. BTTM RIGHT	145.41	DEG. F
C	18	GEN. AIR IN	117.18	DEG. F
C	19	GEN. AIR OUT	135.36	DEG. F
C	20	GEN. FRAME TOP	127.48	DEG. F
C	21	GEN. FRAME BTTM	120.41	DEG. F
C	22	GEN. EXCITER	133.24	DEG. F
C	23	GEN. VOLT. REG.	124.43	DEG. F
C	24	CONTROL PANEL	123.80	DEG. F
C	25	RELAY AREA	127.87	DEG. F
C	26	BATTERY LEFT	146.56	DEG. F
C	27	BATTERY RIGHT	148.85	DEG. F
C	28	AIR IN SET	124.99	DEG. F
C	29	FUEL TANK	116.14	DEG. F
C	30	FUEL OUTLET	134.35	DEG. F

END SCAN GROUP 1 31 DEC 87 09:15:2

STOPPED SINGLE SCAN 31 DEC 87 09:15:2

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BEGIN SCAN GROUP 1    31 DEC 87  09:25:22
60 KW 60HZ GEN SET S/N DZ0 2785

C    1 EXHAUST 1          1096.4 DEG. F
C    2 EXHAUST 2          1097.6 DEG. F
C    3 EXHAUST 3          1136.0 DEG. F
C    4 EXHAUST 4          1154.8 DEG. F
C    5 EXHAUST 5          1147.4 DEG. F
C    6 EXHAUST 6          1103.5 DEG. F
C    7 ENG. COOL. IN      199.44 DEG. F
C    8 ENG. COOL. OUT     215.58 DEG. F
C    9 OIL SUMP           235.11 DEG. F
C   11 OIL COOLER IN      239.01 DEG. F
C   12 OIL COOLER OUT     223.24 DEG. F
C   13  ENG. INTAKE       237.35 DEG. F
C   14 RAD. TOP LEFT      152.94 DEG. F
C   15 RAD. BTTM LEFT     143.35 DEG. F
C   16 RAD. TOP RIGHT     140.16 DEG. F
C   17 RAD. BTTM RIGHT    145.55 DEG. F
C   18 GEN. AIR IN        116.52 DEG. F
C   19 GEN. AIR OUT       137.19 DEG. F
C   20 GEN. FRAME TOP     128.24 DEG. F
C   21 GEN. FRAME BTTM    121.15 DEG. F
C   22 GEN. EXCITER       133.42 DEG. F
C   23 GEN. VOLT. REG.    126.54 DEG. F
C   24 CONTROL PANEL      126.00 DEG. F
C   25 RELAY AREA         127.17 DEG. F
C   26 BATTERY LEFT       148.26 DEG. F
C   27 BATTERY RIGHT      150.46 DEG. F
C   28 AIR IN SET         124.31 DEG. F
C   29 FUEL TANK          119.39 DEG. F
C   30 FUEL OUTLET        135.15 DEG. F

END SCAN GROUP 1      31 DEC 87  09:25:32

STOPPED SINGLE SCAN   31 DEC 87  09:25:32
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TEST DATA

ITEM 60 KW / 60 HZ GENERATOR SET MODIFIED
MFGR. KURZ & KOOT
MODEL NO. MEP 006A
SERIAL NO. DZO 2785

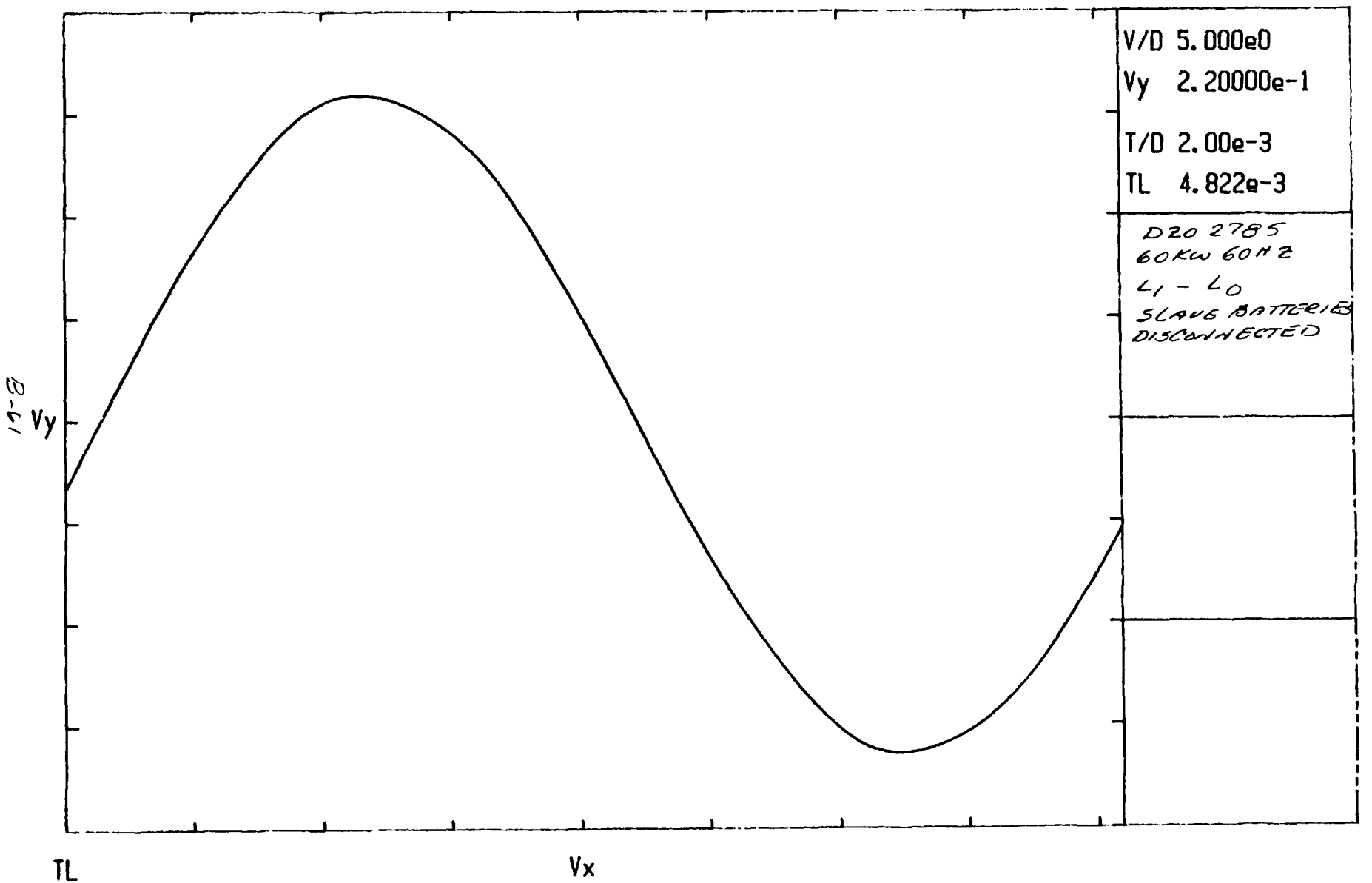
NTS
National Technical Systems
Scientific Services Group
Testing Division
PO Box 38
Hallwood, Virginia 22471
Tel. 703 752 5300

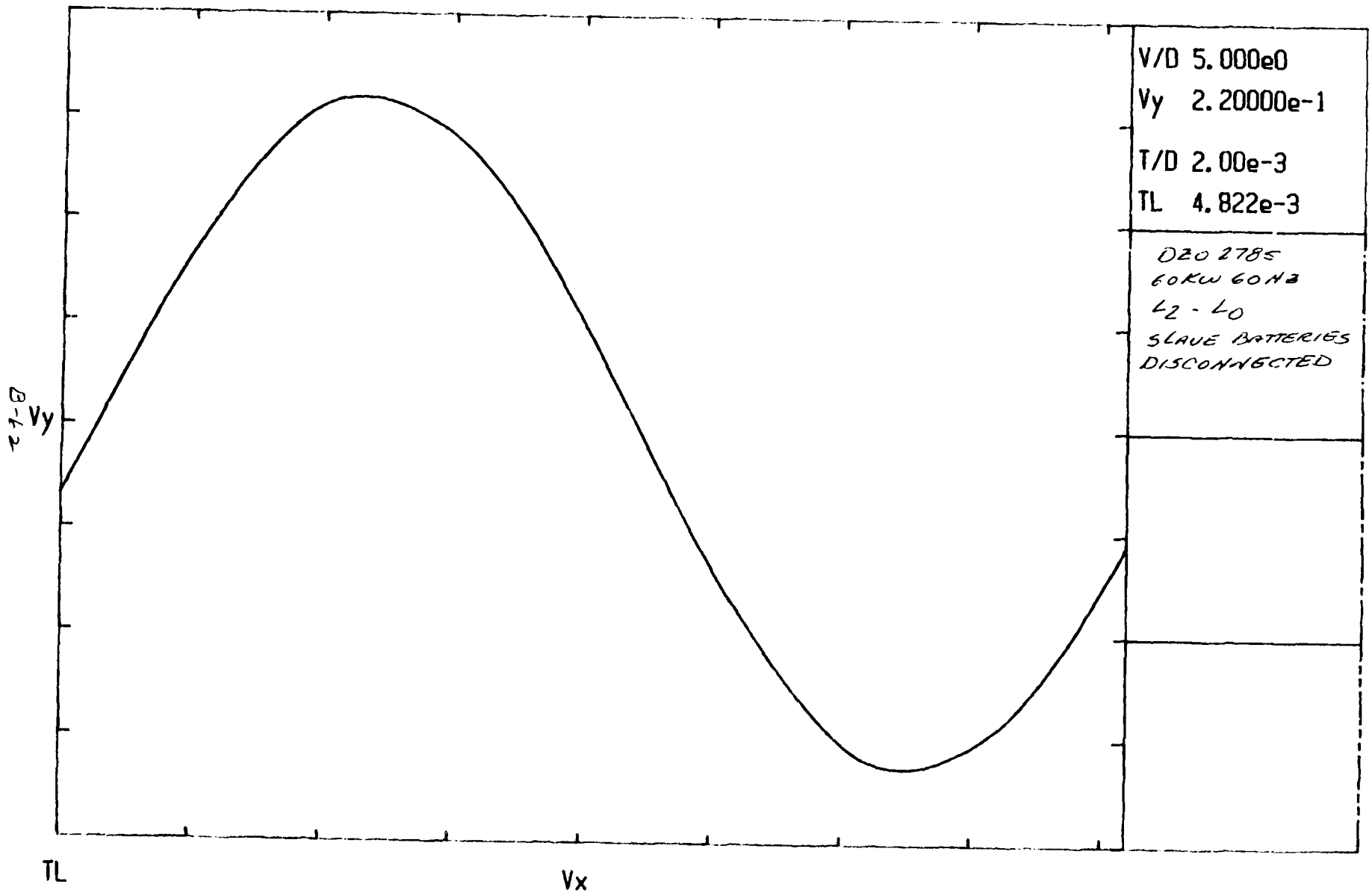
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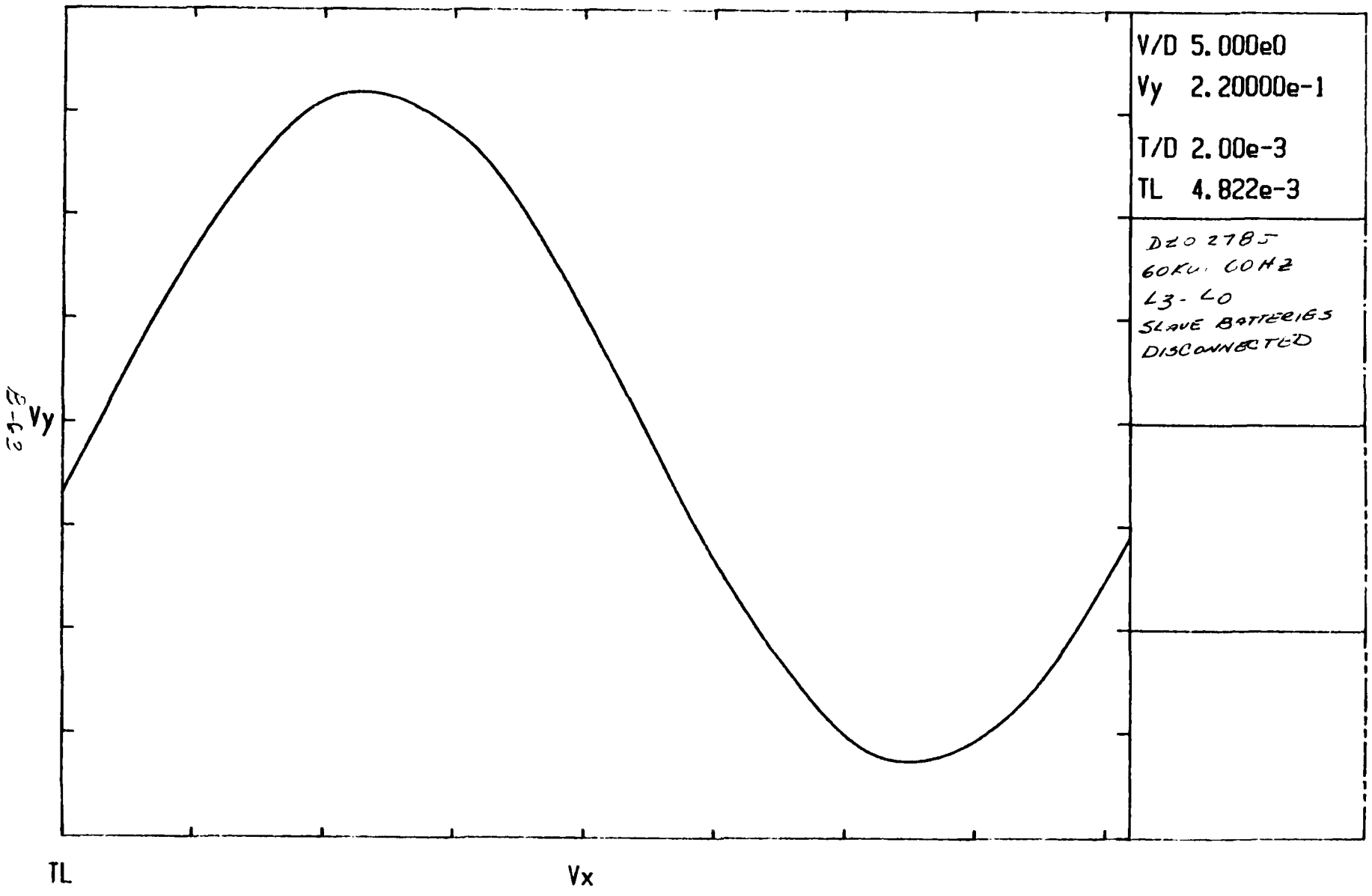
REF. NO. MIL-STD 705; 655.1
SHEET 1 OF 1
DATE 6 JAN. 1988
JOB NO. 555-2140
PROJ. ENGR.
RECORDER/OBSERVER KM / BJ / GC

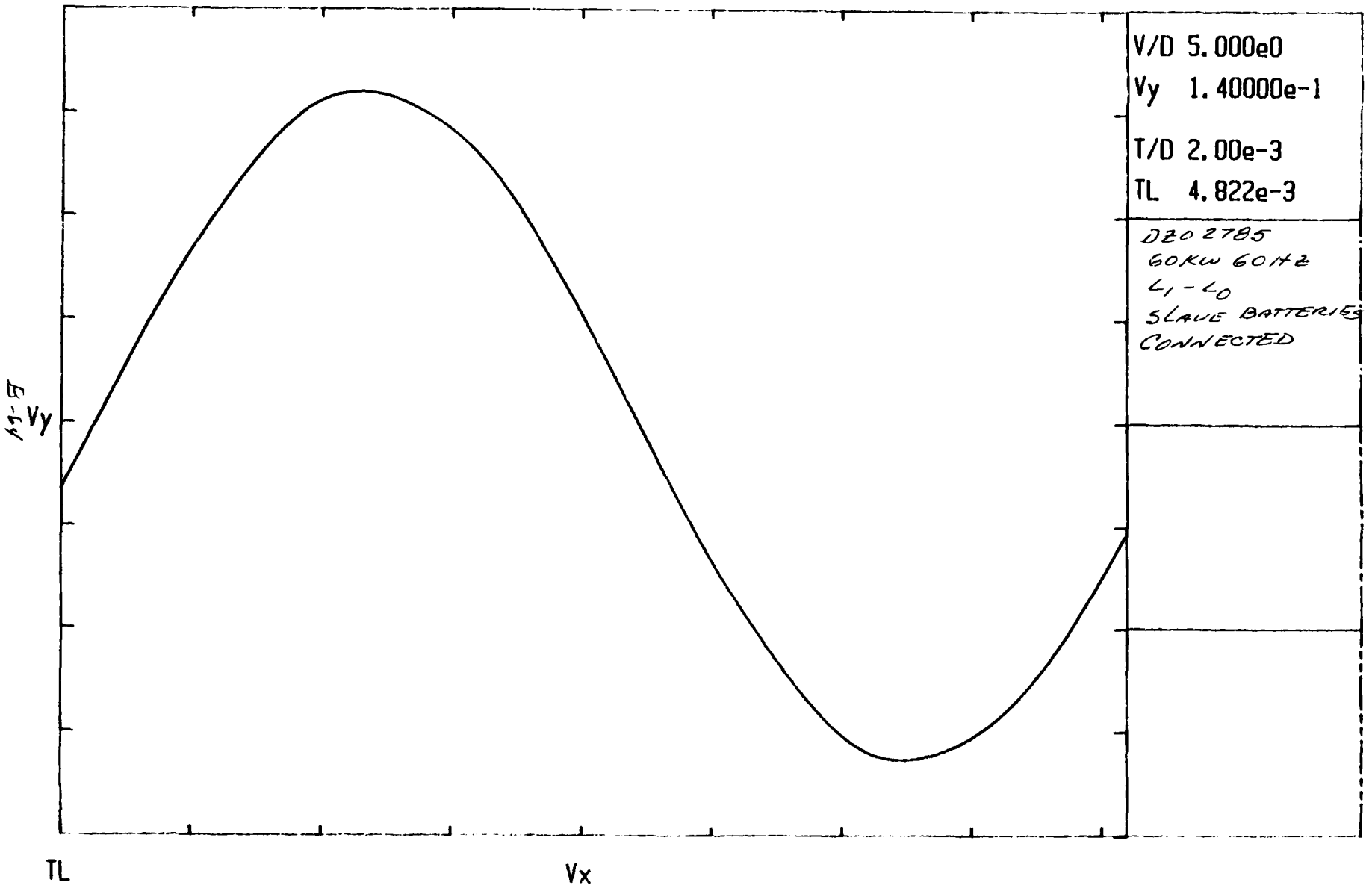
INST TIME	STEP NO.	LOAD STEP	E6028 VOLTAGE L_1-L_0 VAC	L_2-L_0 VAC	L_3-L_0 VAC	E6040D AMPERES x 80 L_1-L_0 AC AMPS	L_2-L_0 AC AMPS	L_3-L_0 AC AMPS	E62300 KILOWATTS x 80 L_1-L_0 Kw	L_2-L_0 Kw	L_3-L_0 Kw	E6248D POWER FACTOR PF	E6241D FREQ. Hz	E6185D D.C. CONTROL VOLTS VDC	E6144D AMPS DCA	AMB. TEMP. °F	PRESS IN EXH
1104			STARTED UNIT USING SLAVE BATTERIES														
1105			SHUT UNIT DOWN TO REVERSE POLARITY ON BATTERIES														
1106			ATTEMPTED TO START UNIT WITH REVERSE POLARITY ON BATTERIES WOULD NOT START														
1107			RESTARTED UNIT WITH PROPER POLARITY														
1108			APPLIED RATED LOAD														
1115		R/L	119.5	119.5	119.5	2.54	2.55	2.55	.25	.25	.25	.80	59.9	27.2	4.4	121	155/155
1116			SLIGHT WAVE FORM DISTORTION ON ALL THREE PHASES														
1119		R/L	DISCONNECTED SLAVE BATTERIES FROM UNIT UNIT STILL RUNNING NO NOTICABLE CHANGE IN UNIT														
1123		N/L												26.8	2.7		
1124		R/L												25.6	4.1		
1124		N/L												26.8	2.25		
1125		R/L												26.3	4.4		
1125		N/L												26.8	2.74		
1126		R/L	119.5	119.5	119.5	2.54	2.55	2.56	.25	.257	.257	.80	60.0	26.3	4.21	118	145/155
1130			NO NOTICABLE CHANGE IN WAVE FORM														
			UNABLE TO ADJUST D.C. CONTROL VOLTAGE ACTUATOR ADJUST INOPERATIVE.														
1141			SHUT UNIT DOWN														

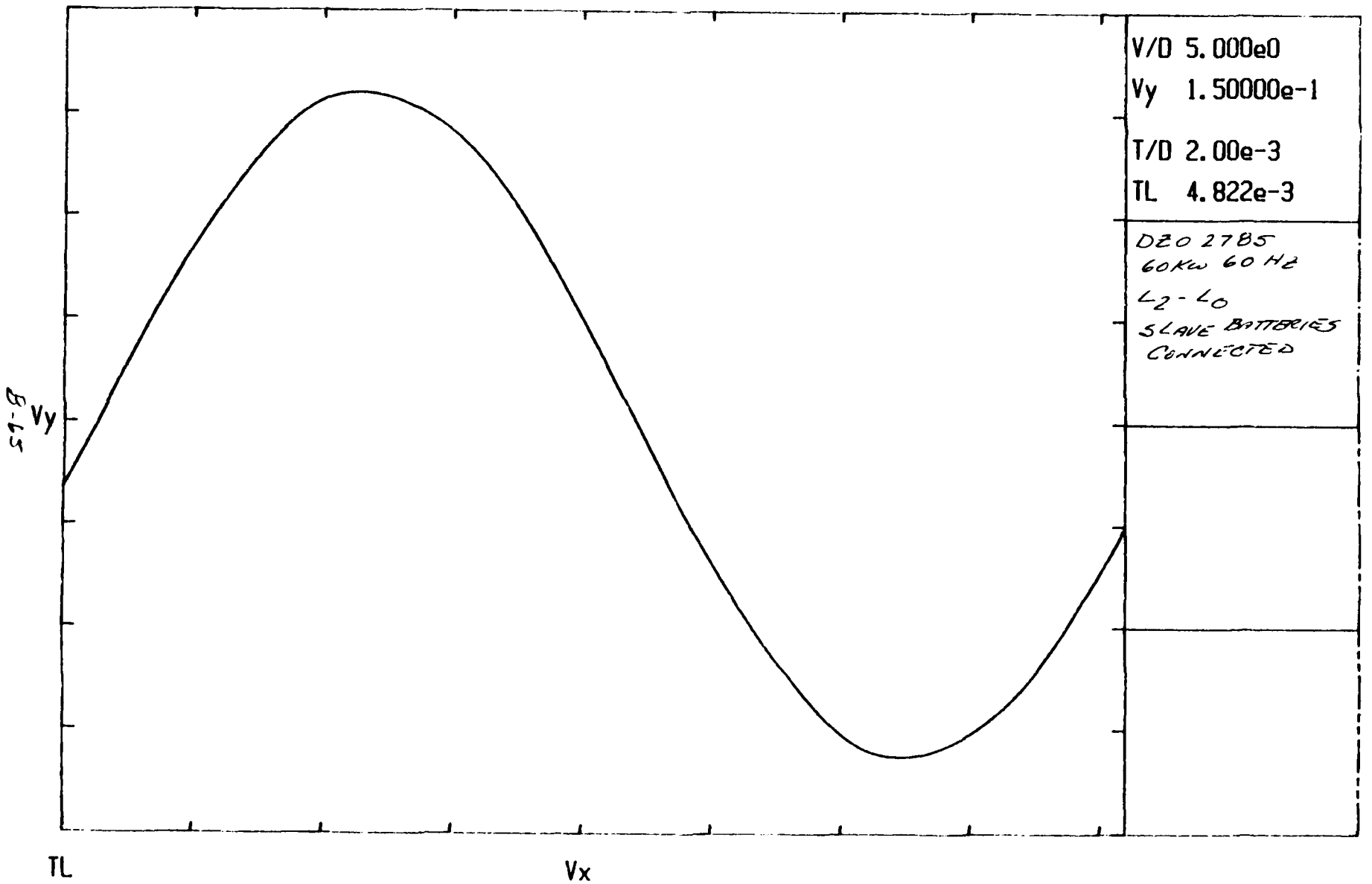
NOTES: MAX STEADY STATE VOLTAGE BANDWIDTH: ± 0.35V, ± 0.29 % MAX STEADY STATE FREQUENCY BANDWIDTH: ± 0.09Hz ± 0.15 %
FAILED REVERSE POLARITY TEST AND D.C. DC CONTROL VOLTAGE ADJUST

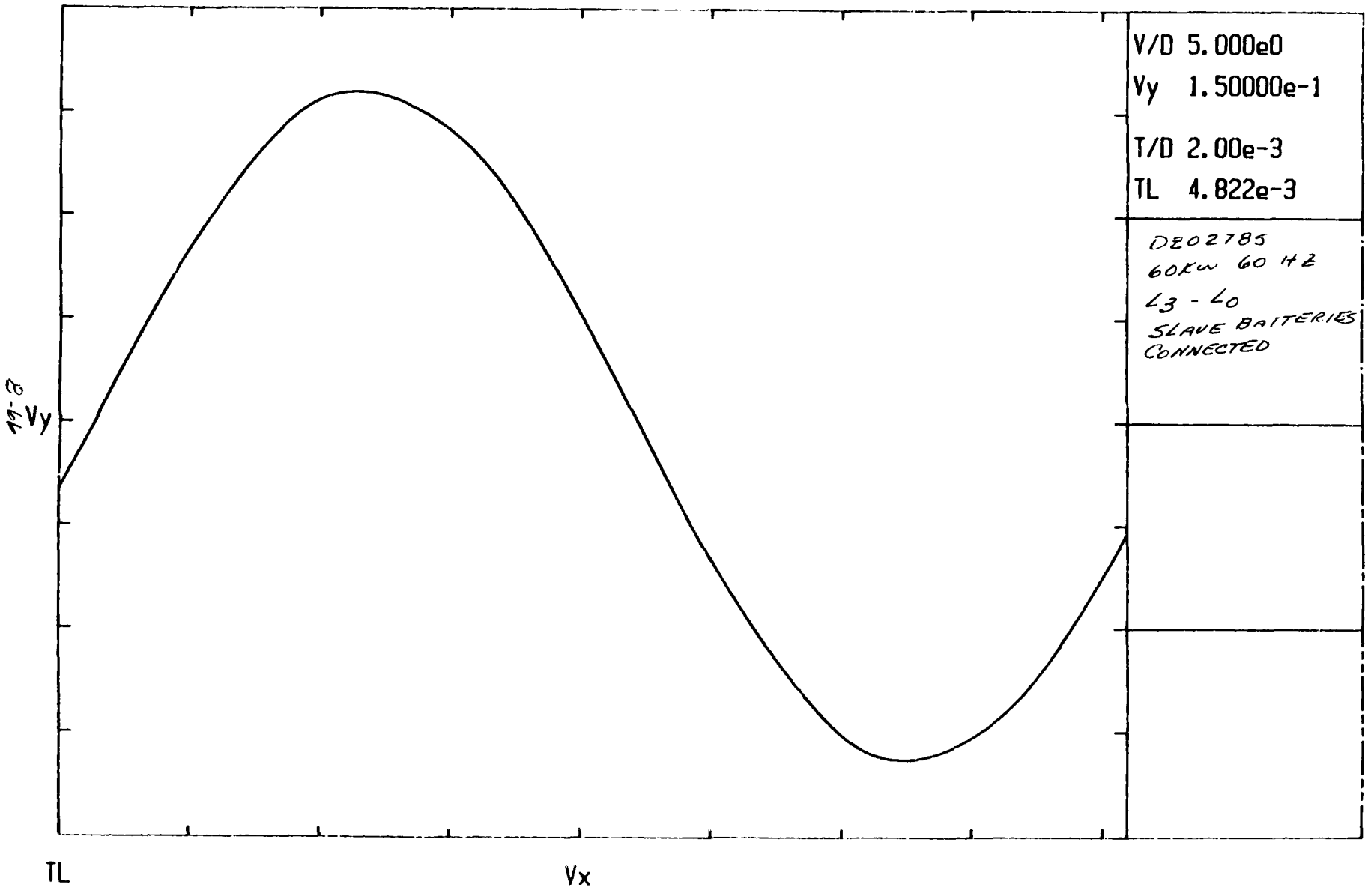

V/D 5.000e0
Vy 2.20000e-1
T/D 2.00e-3
TL 4.822e-3
D20 2785
60KW 60HZ
L1 - L0
SLAVE BATTERIES
DISCONNECTED
B-41
Vy
TL
Vx


V/D 5.000e0
Vy 2.20000e-1
T/D 2.00e-3
TL 4.822e-3
020 2785
60KW 60HZ
L2 - L0
SLAVE BATTERIES
DISCONNECTED
Vy
TL
Vx


V/D 5.000e0
Vy 2.20000e-1
T/D 2.00e-3
TL 4.822e-3
DZO 2785
60KV, 60HZ
L3-L0
SLAVE BATTERIES
DISCONNECTED
Vy
TL
Vx


V/D 5.000e0
Vy 1.40000e-1
T/D 2.00e-3
TL 4.822e-3
DZO 2785
60KW 60HZ
L1 - L0
SLAVE BATTERIES
CONNECTED
A1-B
Vy
TL
Vx


V/D 5.000e0
Vy 1.50000e-1
T/D 2.00e-3
TL 4.822e-3
DEO 2785
60KW 60 Hz
L2 - L0
SLAVE BATTERIES
CONNECTED
Vy
TL
Vx


V/D 5.000e0
Vy 1.50000e-1
T/D 2.00e-3
TL 4.822e-3
DZ02785
60KW 60 HZ
L3 - L0
SLAVE BATTERIES
CONNECTED
19-8
Vy
TL
Vx

D.C. Control Test, method 655.1

BEGIN SCAN GROUP 1 06 JAN 88 11:04:55
60 KW 60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	407.64	DEG.	F
C	2	EXHAUST 2	410.12	DEG.	F
C	3	EXHAUST 3	424.78	DEG.	F
C	4	EXHAUST 4	443.18	DEG.	F
C	5	EXHAUST 5	403.97	DEG.	F
C	6	EXHAUST 6	413.60	DEG.	F
C	7	ENG. COOL. IN	135.16	DEG.	F
C	8	ENG. COOL. OUT	179.15	DEG.	F
C	9	OIL SUMP	171.21	DEG.	F
C	10	WATER TEMP/HEAD	188.13	DEG.	F
C	11	OIL COOLER IN	165.37	DEG.	F
C	12	OIL COOLER OUT	150.70	DEG.	F
C	13	ENG. INTAKE	137.09	DEG.	F
C	14	RAD. TOP LEFT	139.70	DEG.	F
C	15	RAD. BTTM LEFT	126.52	DEG.	F
C	16	RAD. TOP RIGHT	128.95	DEG.	F
C	17	RAD. BTTM RIGHT		OPEN	TC
C	18	GEN. AIR IN	113.87	DEG.	F
C	19	GEN. AIR OUT	110.70	DEG.	F
C	20	GEN. FRAME TOP	107.35	DEG.	F
C	21	GEN. FRAME BTTM	104.13	DEG.	F
C	22	GEN. EXCITER	117.40	DEG.	F
C	23	GEN. VOLT. REG.	108.54	DEG.	F
C	24	CONTROL PANEL	108.26	DEG.	F
C	25	RELAY AREA	121.50	DEG.	F
C	26	BATTERY LEFT	111.81	DEG.	F
C	27	BATTERY RIGHT	110.67	DEG.	F
C	28	AIR IN SET	117.25	DEG.	F
C	29	FUEL TANK	67.374	DEG.	F
C	30	FUEL OUTLET	104.25	DEG.	F

END SCAN GROUP 1 06 JAN 88 11:05:06

STOPPED SINGLE SCAN 06 JAN 88 11:05:06

BEGIN SCAN GROUP 1 06 JAN 88 11:06:38
60 KW 60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	321.67	DEG.	F
C	2	EXHAUST 2	317.56	DEG.	F
C	3	EXHAUST 3	317.06	DEG.	F
C	4	EXHAUST 4	332.99	DEG.	F
C	5	EXHAUST 5	310.84	DEG.	F
C	6	EXHAUST 6	316.32	DEG.	F
C	7	ENG. COOL. IN	153.49	DEG.	F
C	8	ENG. COOL. OUT	172.43	DEG.	F
C	9	OIL SUMP	172.50	DEG.	F
C	10	WATER TEMP/HEAD	178.79	DEG.	F
C	11	OIL COOLER IN	165.28	DEG.	F
C	12	OIL COOLER OUT	162.15	DEG.	F
C	13	ENG. INTAKE	137.00	DEG.	F
C	14	RAD. TOP LEFT	134.63	DEG.	F
C	15	RAD. BTTM LEFT	126.11	DEG.	F
C	16	RAD. TOP RIGHT	130.08	DEG.	F
C	17	RAD. BTTM RIGHT		OPEN	TC
C	18	GEN. AIR IN	113.68	DEG.	F
C	19	GEN. AIR OUT	109.81	DEG.	F
C	20	GEN. FRAME TOP	109.03	DEG.	F
C	21	GEN. FRAME BTTM	105.87	DEG.	F
C	22	GEN. EXCITER	117.61	DEG.	F
C	23	GEN. VOLT. REG.	109.35	DEG.	F
C	24	CONTROL PANEL	109.52	DEG.	F
C	25	RELAY AREA	121.50	DEG.	F
C	26	BATTERY LEFT	112.20	DEG.	F
C	27	BATTERY RIGHT	112.11	DEG.	F
C	28	AIR IN SET	117.44	DEG.	F
C	29	FUEL TANK	67.681	DEG.	F
C	30	FUEL OUTLET	105.05	DEG.	F

END SCAN GROUP 1 06 JAN 88 11:06:48

STOPPED SINGLE SCAN 06 JAN 88 11:06:48

BEGIN SCAN GROUP 1 06 JAN 88 11:07:2[illegible]
60 KW 60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	403.11	DEG.	F
C	2	EXHAUST 2	405.28	DEG.	F
C	3	EXHAUST 3	419.06	DEG.	F
C	4	EXHAUST 4	435.30	DEG.	F
C	5	EXHAUST 5	400.99	DEG.	F
C	6	EXHAUST 6	407.36	DEG.	F
C	7	ENG. COOL. IN	147.27	DEG.	F
C	8	ENG. COOL. OUT	183.40	DEG.	F
C	9	OIL SUMP	171.68	DEG.	F
C	10	WATER TEMP/HEAD	182.79	DEG.	F
C	11	OIL COOLER IN	169.11	DEG.	F
C	12	OIL COOLER OUT	162.78	DEG.	F
C	13	ENG. INTAKE	139.71	DEG.	F
C	14	RAD. TOP LEFT	133.75	DEG.	F
C	15	RAD. BTTM LEFT	125.80	DEG.	F
C	16	RAD. TOP RIGHT	126.54	DEG.	F
C	17	RAD. BTTM RIGHT		OPEN	TC
C	18	GEN. AIR IN	115.17	DEG.	F
C	19	GEN. AIR OUT	111.88	DEG.	F
C	20	GEN. FRAME TOP	108.93	DEG.	F
C	21	GEN. FRAME BTTM	105.42	DEG.	F
C	22	GEN. EXCITER	117.59	DEG.	F
C	23	GEN. VOLT. REG.	109.72	DEG.	F
C	24	CONTROL PANEL	109.65	DEG.	F
C	25	RELAY AREA	121.79	DEG.	F
C	26	BATTERY LEFT	112.13	DEG.	F
C	27	BATTERY RIGHT	111.41	DEG.	F
C	28	AIR IN SET	117.53	DEG.	F
C	29	FUEL TANK	67.755	DEG.	F
C	30	FUEL OUTLET	105.97	DEG.	F

END SCAN GROUP 1 06 JAN 88 11:07:3[illegible]

STOPPED SINGLE SCAN 06 JAN 88 11:07:3[illegible]

BEGIN SCAN GROUP 1 06 JAN 88 11:08:2[illegible]
60 KW 60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	680.22	DEG.	F
C	2	EXHAUST 2	660.19	DEG.	F
C	3	EXHAUST 3	701.20	DEG.	F
C	4	EXHAUST 4	731.51	DEG.	F
C	5	EXHAUST 5	668.35	DEG.	F
C	6	EXHAUST 6	665.85	DEG.	F
C	7	ENG. COOL. IN	137.50	DEG.	F
C	8	ENG. COOL. OUT	178.06	DEG.	F
C	9	OIL SUMP	163.16	DEG.	F
C	10	WATER TEMP/HEAD	179.17	DEG.	F
C	11	OIL COOLER IN	173.84	DEG.	F
C	12	OIL COOLER OUT	167.31	DEG.	F
C	13	ENG. INTAKE	162.45	DEG.	F
C	14	RAD. TOP LEFT	131.12	DEG.	F
C	15	RAD. BTTM LEFT	126.39	DEG.	F
C	16	RAD. TOP RIGHT	125.61	DEG.	F
C	17	RAD. BTTM RIGHT	134.65	DEG.	F
C	18	GEN. AIR IN	117.99	DEG.	F
C	19	GEN. AIR OUT	114.64	DEG.	F
C	20	GEN. FRAME TOP	111.84	DEG.	F
C	21	GEN. FRAME BTTM	109.21	DEG.	F
C	22	GEN. EXCITER	118.13	DEG.	F
C	23	GEN. VOLT. REG.	110.77	DEG.	F
C	24	CONTROL PANEL	111.44	DEG.	F
C	25	RELAY AREA	118.01	DEG.	F
C	26	BATTERY LEFT	112.43	DEG.	F
C	27	BATTERY RIGHT	114.68	DEG.	F
C	28	AIR IN SET	119.04	DEG.	F
C	29	FUEL TANK	68.074	DEG.	F
C	30	FUEL OUTLET	106.72	DEG.	F

END SCAN GROUP 1 06 JAN 88 11:08:3[illegible]

STOPPED SINGLE SCAN 06 JAN 88 11:08:3[illegible]

BEGIN SCAN GROUP 1 06 JAN 88 11:11:42
60 KW 60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	1062.3	DEG. F
C	2	EXHAUST 2	1078.0	DEG. F
C	3	EXHAUST 3	1117.1	DEG. F
C	4	EXHAUST 4	1139.5	DEG. F
C	5	EXHAUST 5	1116.0	DEG. F
C	6	EXHAUST 6	1063.7	DEG. F
C	7	ENG. COOL. IN	180.99	DEG. F
C	8	ENG. COOL. OUT	194.68	DEG. F
C	9	OIL SUMP	179.86	DEG. F
C	10	WATER TEMP/HEAD	198.43	DEG. F
C	11	OIL COOLER IN	200.63	DEG. F
C	12	OIL COOLER OUT	192.29	DEG. F
C	13	ENG. INTAKE	226.29	DEG. F
C	14	RAD. TOP LEFT	146.79	DEG. F
C	15	RAD. BTTM LEFT	139.02	DEG. F
C	16	RAD. TOP RIGHT	136.97	DEG. F
C	17	RAD. BTTM RIGHT		OPEN TC
C	18	GEN. AIR IN	117.52	DEG. F
C	19	GEN. AIR OUT	121.03	DEG. F
C	20	GEN. FRAME TOP	115.10	DEG. F
C	21	GEN. FRAME BTTM	113.89	DEG. F
C	22	GEN. EXCITER	123.06	DEG. F
C	23	GEN. VOLT. REG.	112.94	DEG. F
C	24	CONTROL PANEL	114.48	DEG. F
C	25	RELAY AREA	120.61	DEG. F
C	26	BATTERY LEFT	116.35	DEG. F
C	27	BATTERY RIGHT	122.40	DEG. F
C	28	AIR IN SET	120.12	DEG. F
C	29	FUEL TANK	66.746	DEG. F
C	30	FUEL OUTLET	113.15	DEG. F

END SCAN GROUP 1 06 JAN 88 11:11:52

STOPPED SINGLE SCAN 06 JAN 88 11:11:52

BEGIN SCAN GROUP 1 06 JAN 88 11:25:3
60 KW 60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	1018.4	DEG. F
C	2	EXHAUST 2	1031.5	DEG. F
C	3	EXHAUST 3	1074.6	DEG. F
C	4	EXHAUST 4	1105.2	DEG. F
C	5	EXHAUST 5	1089.3	DEG. F
C	6	EXHAUST 6	1033.7	DEG. F
C	7	ENG. COOL. IN	178.57	DEG. F
C	8	ENG. COOL. OUT	193.02	DEG. F
C	9	OIL SUMP	198.34	DEG. F
C	10	WATER TEMP/HEAD	198.22	DEG. F
C	11	OIL COOLER IN	219.52	DEG. F
C	12	OIL COOLER OUT	204.66	DEG. F
C	13	ENG. INTAKE	221.50	DEG. F
C	14	RAD. TOP LEFT	143.79	DEG. F
C	15	RAD. BTTM LEFT	135.75	DEG. F
C	16	RAD. TOP RIGHT	132.02	DEG. F
C	17	RAD. BTTM RIGHT	135.63	DEG. F
C	18	GEN. AIR IN	112.08	DEG. F
C	19	GEN. AIR OUT	126.41	DEG. F
C	20	GEN. FRAME TOP	119.20	DEG. F
C	21	GEN. FRAME BTTM	120.80	DEG. F
C	22	GEN. EXCITER	126.99	DEG. F
C	23	GEN. VOLT. REG.	119.30	DEG. F
C	24	CONTROL PANEL	120.55	DEG. F
C	25	RELAY AREA	120.63	DEG. F
C	26	BATTERY LEFT	122.34	DEG. F
C	27	BATTERY RIGHT	121.46	DEG. F
C	28	AIR IN SET	118.00	DEG. F
C	29	FUEL TANK	72.314	DEG. F
C	30	FUEL OUTLET	126.17	DEG. F

END SCAN GROUP 1 06 JAN 88 11:25:4

STOPPED SINGLE SCAN 06 JAN 88 11:25:4

BEGIN SCAN GROUP 1 06 JAN 88 11:19:24
60 KW 60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	1074.7	DEG. F
C	2	EXHAUST 2	1089.2	DEG. F
C	3	EXHAUST 3	1129.5	DEG. F
C	4	EXHAUST 4	1166.3	DEG. F
C	5	EXHAUST 5	1157.0	DEG. F
C	6	EXHAUST 6	1093.7	DEG. F
C	7	ENG. COOL. IN	187.68	DEG. F
C	8	ENG. COOL. OUT	203.28	DEG. F
C	9	OIL SUMP	203.71	DEG. F
C	10	WATER TEMP/HEAD	209.34	DEG. F
C	11	OIL COOLER IN	225.28	DEG. F
C	12	OIL COOLER OUT	210.91	DEG. F
C	13	ENG. INTAKE	233.75	DEG. F
C	14	RAD. TOP LEFT	146.44	DEG. F
C	15	RAD. BTTM LEFT	138.23	DEG. F
C	16	RAD. TOP RIGHT	133.11	DEG. F
C	17	RAD. BTTM RIGHT	137.63	DEG. F
C	18	GEN. AIR IN	113.68	DEG. F
C	19	GEN. AIR OUT	125.55	DEG. F
C	20	GEN. FRAME TOP	118.64	DEG. F
C	21	GEN. FRAME BTTM	118.69	DEG. F
C	22	GEN. EXCITER	127.82	DEG. F
C	23	GEN. VOLT. REG.	117.98	DEG. F
C	24	CONTROL PANEL	119.43	DEG. F
C	25	RELAY AREA	122.22	DEG. F
C	26	BATTERY LEFT	124.21	DEG. F
C	27	BATTERY RIGHT	123.06	DEG. F
C	28	AIR IN SET	117.93	DEG. F
C	29	FUEL TANK	70.715	DEG. F
C	30	FUEL OUTLET	121.49	DEG. F

END SCAN GROUP 1 06 JAN 88 11:19:34

STOPPED SINGLE SCAN 06 JAN 88 11:19:34

BEGIN SCAN GROUP 1 06 JAN 88 11:41:1
60 KW 60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	758.76	DEG. F
C	2	EXHAUST 2	760.78	DEG. F
C	3	EXHAUST 3	795.45	DEG. F
C	4	EXHAUST 4	831.47	DEG. F
C	5	EXHAUST 5	828.65	DEG. F
C	6	EXHAUST 6	799.24	DEG. F
C	7	ENG. COOL. IN	189.80	DEG. F
C	8	ENG. COOL. OUT	208.78	DEG. F
C	9	OIL SUMP	227.05	DEG. F
C	10	WATER TEMP/HEAD	219.23	DEG. F
C	11	OIL COOLER IN	227.60	DEG. F
C	12	OIL COOLER OUT	209.77	DEG. F
C	13	ENG. INTAKE	201.98	DEG. F
C	14	RAD. TOP LEFT	159.71	DEG. F
C	15	RAD. BTTM LEFT	148.32	DEG. F
C	16	RAD. TOP RIGHT	139.41	DEG. F
C	17	RAD. BTTM RIGHT	141.72	DEG. F
C	18	GEN. AIR IN	117.40	DEG. F
C	19	GEN. AIR OUT	131.41	DEG. F
C	20	GEN. FRAME TOP	124.63	DEG. F
C	21	GEN. FRAME BTTM	126.64	DEG. F
C	22	GEN. EXCITER	131.30	DEG. F
C	23	GEN. VOLT. REG.	122.09	DEG. F
C	24	CONTROL PANEL	123.19	DEG. F
C	25	RELAY AREA	130.16	DEG. F
C	26	BATTERY LEFT	124.12	DEG. F
C	27	BATTERY RIGHT	123.83	DEG. F
C	28	AIR IN SET	119.78	DEG. F
C	29	FUEL TANK	76.826	DEG. F
C	30	FUEL OUTLET	133.69	DEG. F

END SCAN GROUP 1 06 JAN 88 11:41:1

STOPPED SINGLE SCAN 06 JAN 88 11:41:1

TEST DATA

ITEM 60 Kw / 60 Hz
Generator Set
Modified

MFGR. Kurz & Root

MODEL NO. MEP 006A

SERIAL NO. 1) ZO 2785

NTS

National Technical Systems | Scientific Services Group | Testing Division
P.O. Box 38
Harlwood, Virginia 22471
Tel: 703 752 5300

REF. NO. MIL-STD 705

SHEET 1 OF 21

DATE 6 JAN. 1988

JOB NO. 555-2140

PROJ. ENGR.

RECORDER/OBSERVER KM/BJ/GC

CIRCUIT INTERRUPTER TEST
(SHORT CIRCUIT) 5.2.1

INST TIME	STEP NO.	LOAD STEP	E60280 VOLTAGE L1-L0 VAC	L2-L0 VAC	L3-L0 VAC	E60400 AMPERES x 80 L1-L0 AC AMPS	L2-L0 AC AMPS	L3-L0 AC AMPS	E62300 KILOWATTS x 80 L1-L0 Kw	L2-L0 Kw	L3-L0 Kw	E62420 POWER FACTOR PF	E62440 FREQ. Hz	E61670 EXCITER VOLTS VDC	E62480 FIELD AMPS DCA	AMB. TEMP. °F	Press intake IN WATER	Press exh IN WATER
1237			START UNIT															
1241			APPLIED RATED LOAD															
1242		R/L	119.5	120	119.9	2.54	2.56	2.56	.25	.25	.251	.80	59.8	12.6	3.2	120	15.2	15.4
1443			APPLIED SHORT CIRCUIT INTERRUPTOR BREAKER OPENED									INDICATOR ON		L1-L0				
1244			REAPPLIED RATED LOAD															
	*	RETEST	L1-L0															
1246		R/L	119.5	120	119.8	54	53	56	.25	.251	.251	.80	59.9	13.0	3.4	120	15.4	15.8
1247			APPLIED SHORT CIRCUIT TO			L1-L0		BREAKER OPENED			INDICATOR	LIGHT ON						
1250			REAPPLIED RATED LOAD															
1251		R/L	119.8	120	119.9	2.54	2.56	2.56	.25	.257	.251	.80	59.8	13.2	3.25	120	15.0	15.3
1252			APPLIED SHORT CIRCUIT TO			L1-L2		BREAKER OPENED			INDICATOR	LIGHT ON						
1254			REAPPLIED RATED LOAD															
1254		R/L	119.5	119.9	119.9	2.54	2.55	2.55	.25	.257	.257	.80	59.9	13.0	3.25	120	15.0	15.4
1255			APPLIED SHORT CIRCUIT TO			L1-L3		BREAKER OPENED			INDICATOR LIGHT ON							
1256			REAPPLIED RATED LOAD															
1257		R/L	120	119.5	119.9	2.54	2.56	2.56	.25	.257	.257	.80	59.9	12.7	3.2	120	15.4	15.8
1309			APPLIED SHOR CIRCUIT TO			L2-L0		BREAKER OPENED			INDICATOR LIGHT ON							
1310			REAPPLIED RATED LOAD															
1310		R/L	120	119.5	119.9	2.54	2.55	2.56	.25	.251	.251	.80	59.8	13.0	3.25	119	15.2	15.6
1312			APPLIED SHORT CIRCUIT TO			L2-L3		BREAKER OPENED			INDICATOR LIGHT ON							
1320			REAPPLIED RATED LOAD															
1320		R/L	120	119.9	119.5	2.54	2.56	2.56	.25	.251	.251	.80	59.7	13.0	3.25	120	15.1	15.5
1322			APPLIED SHORT CIRCUIT TO			L3-L0		BREAKER OPENED			INDICATOR LIGHT ON							
1326			REAPPLIED RATED LOAD															
1326		R/L	120	120	119.5	2.55	2.56	2.56	.25	.251	.251	.80	59.7	13.2	3.25	120	14.5	15.5
1327			APPLIED SHORT CIRCUIT TO			L1-L2-L3		BREAKER OPENED			INDICATOR LIGHT ON							
	1327	SHUT UNIT DOWN		END OF TEST														

NOTES:

TEST DATA

ITEM: 60 KW, 60 HZ Generator Set Modified

MFGR. Kurz & Root

MODEL NO. M&P 006A

SERIAL NO. DZO 2785

NTS

National Technical Systems | Scientific Services Group | Testing Division, PO Box 38, Hartwood, Virginia 22471, Tel: 703/752 5300

Circuit Interruptor Test (short circuit) 512.1

REF. NO. Mil-Std 705

SHEET 1 OF 1

DATE 18 Jan. 1988

JOB NO. 555-2140

PROJ. ENGR.

RECORDER/OBSERVER

INST. →													
ϕ short ↓		Current Before Short	Current Max		Interrupt Time								
UNITS		Amps	Amps		msec								
SYM.													
L_1-L_0		203.2	2188.3		33.4								
L_1-L_2		203.2	1646.4		25.0								
L_3-L_1		203.2	1505.8		25.0								
L_2-L_0		204.6	2250.6		33.4								
L_2-L_3		204.0	1673.8		25.0								
L_3-L_0		204.6	2108.9		33.4								
L_1, L_2, L_3		204.6	1657.8		25.0								

NOTES:

Circuit Interrupt Test, Metro 5.2.

BEGIN SCAN GROUP 1 06 JAN 88 12:42:23
60 KW 60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	1051.5	DEG. F
C	2	EXHAUST 2	1064.5	DEG. F
C	3	EXHAUST 3	1107.7	DEG. F
C	4	EXHAUST 4	1129.5	DEG. F
C	5	EXHAUST 5	1097.1	DEG. F
C	6	EXHAUST 6	1069.0	DEG. F
C	7	ENG. COOL. IN	174.69	DEG. F
C	8	ENG. COOL. OUT	190.55	DEG. F
C	9	OIL SUMP	176.55	DEG. F
C	10	WATER TEMP/HEAD	194.38	DEG. F
C	11	OIL COOLER IN	197.68	DEG. F
C	12	OIL COOLER OUT	188.58	DEG. F
C	13	ENG. INTAKE	225.11	DEG. F
C	14	RAD. TOP LEFT	147.12	DEG. F
C	15	RAD. BTTM LEFT	140.62	DEG. F
C	16	RAD. TOP RIGHT	137.83	DEG. F
C	17	RAD. BTTM RIGHT	137.40	DEG. F
C	18	GEN. AIR IN	117.93	DEG. F
C	19	GEN. AIR OUT	132.97	DEG. F
C	20	GEN. FRAME TOP	128.09	DEG. F
C	21	GEN. FRAME BTTM	128.11	DEG. F
C	22	GEN. EXCITER	133.67	DEG. F
C	23	GEN. VOLT. REG.	136.30	DEG. F
C	24	CONTROL PANEL	136.42	DEG. F
C	25	RELAY AREA	126.52	DEG. F
C	26	BATTERY LEFT	112.85	DEG. F
C	27	BATTERY RIGHT	116.17	DEG. F
C	28	AIR IN SET	120.29	DEG. F
C	29	FUEL TANK	83.506	DEG. F
C	30	FUEL OUTLET	145.22	DEG. F

END SCAN GROUP 1 06 JAN 88 12:42:33

STOPPED SINGLE SCAN 06 JAN 88 12:42:33

BEGIN SCAN GROUP 1 06 JAN 88 12:51:1
60 KW 60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	985.29	DEG. F
C	2	EXHAUST 2	1005.9	DEG. F
C	3	EXHAUST 3	1050.1	DEG. F
C	4	EXHAUST 4	1063.6	DEG. F
C	5	EXHAUST 5	1038.4	DEG. F
C	6	EXHAUST 6	1007.7	DEG. F
C	7	ENG. COOL. IN	171.44	DEG. F
C	8	ENG. COOL. OUT	188.59	DEG. F
C	9	OIL SUMP	187.35	DEG. F
C	10	WATER TEMP/HEAD	191.99	DEG. F
C	11	OIL COOLER IN	208.03	DEG. F
C	12	OIL COOLER OUT	196.19	DEG. F
C	13	ENG. INTAKE	214.35	DEG. F
C	14	RAD. TOP LEFT	149.98	DEG. F
C	15	RAD. BTTM LEFT	141.79	DEG. F
C	16	RAD. TOP RIGHT	139.72	DEG. F
C	17	RAD. BTTM RIGHT	140.20	DEG. F
C	18	GEN. AIR IN	116.95	DEG. F
C	19	GEN. AIR OUT	132.35	DEG. F
C	20	GEN. FRAME TOP	124.98	DEG. F
C	21	GEN. FRAME BTTM	127.89	DEG. F
C	22	GEN. EXCITER	131.65	DEG. F
C	23	GEN. VOLT. REG.	131.48	DEG. F
C	24	CONTROL PANEL	131.53	DEG. F
C	25	RELAY AREA	123.84	DEG. F
C	26	BATTERY LEFT	123.49	DEG. F
C	27	BATTERY RIGHT	123.05	DEG. F
C	28	AIR IN SET	120.58	DEG. F
C	29	FUEL TANK	85.462	DEG. F
C	30	FUEL OUTLET	143.85	DEG. F

END SCAN GROUP 1 06 JAN 88 12:51:2

STOPPED SINGLE SCAN 06 JAN 88 12:51:2

BEGIN SCAN GROUP 1 06 JAN 88 12:46:18
60 KW 60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	1038.7	DEG. F
C	2	EXHAUST 2	1056.8	DEG. F
C	3	EXHAUST 3	1106.1	DEG. F
C	4	EXHAUST 4	1125.2	DEG. F
C	5	EXHAUST 5	1111.9	DEG. F
C	6	EXHAUST 6	1062.2	DEG. F
C	7	ENG. COOL. IN	179.97	DEG. F
C	8	ENG. COOL. OUT	194.88	DEG. F
C	9	OIL SUMP	187.82	DEG. F
C	10	WATER TEMP/HEAD	198.65	DEG. F
C	11	OIL COOLER IN	211.45	DEG. F
C	12	OIL COOLER OUT	199.56	DEG. F
C	13	ENG. INTAKE	227.69	DEG. F
C	14	RAD. TOP LEFT	142.95	DEG. F
C	15	RAD. BTTM LEFT	139.54	DEG. F
C	16	RAD. TOP RIGHT	136.67	DEG. F
C	17	RAD. BTTM RIGHT	138.82	DEG. F
C	18	GEN. AIR IN	116.25	DEG. F
C	19	GEN. AIR OUT	133.19	DEG. F
C	20	GEN. FRAME TOP	127.40	DEG. F
C	21	GEN. FRAME BTTM	128.54	DEG. F
C	22	GEN. EXCITER	132.06	DEG. F
C	23	GEN. VOLT. REG.	133.83	DEG. F
C	24	CONTROL PANEL	134.82	DEG. F
C	25	RELAY AREA	125.39	DEG. F
C	26	BATTERY LEFT	119.25	DEG. F
C	27	BATTERY RIGHT	122.46	DEG. F
C	28	AIR IN SET	120.64	DEG. F
C	29	FUEL TANK	84.292	DEG. F
C	30	FUEL OUTLET	144.49	DEG. F

END SCAN GROUP 1 06 JAN 88 12:46:28

STOPPED SINGLE SCAN 06 JAN 88 12:46:28

BEGIN SCAN GROUP 1 06 JAN 88 12:54:3
60 KW 60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	972.02	DEG. F
C	2	EXHAUST 2	985.50	DEG. F
C	3	EXHAUST 3	1026.9	DEG. F
C	4	EXHAUST 4	1044.0	DEG. F
C	5	EXHAUST 5	1015.6	DEG. F
C	6	EXHAUST 6	984.89	DEG. F
C	7	ENG. COOL. IN	172.72	DEG. F
C	8	ENG. COOL. OUT	187.87	DEG. F
C	9	OIL SUMP	189.36	DEG. F
C	10	WATER TEMP/HEAD	190.92	DEG. F
C	11	OIL COOLER IN	209.15	DEG. F
C	12	OIL COOLER OUT	196.82	DEG. F
C	13	ENG. INTAKE	210.49	DEG. F
C	14	RAD. TOP LEFT	146.98	DEG. F
C	15	RAD. BTTM LEFT	142.98	DEG. F
C	16	RAD. TOP RIGHT	138.25	DEG. F
C	17	RAD. BTTM RIGHT	139.93	DEG. F
C	18	GEN. AIR IN	117.27	DEG. F
C	19	GEN. AIR OUT	132.57	DEG. F
C	20	GEN. FRAME TOP	124.72	DEG. F
C	21	GEN. FRAME BTTM	128.18	DEG. F
C	22	GEN. EXCITER	129.81	DEG. F
C	23	GEN. VOLT. REG.	130.32	DEG. F
C	24	CONTROL PANEL	130.40	DEG. F
C	25	RELAY AREA	123.57	DEG. F
C	26	BATTERY LEFT	124.65	DEG. F
C	27	BATTERY RIGHT	124.67	DEG. F
C	28	AIR IN SET	120.36	DEG. F
C	29	FUEL TANK	86.207	DEG. F
C	30	FUEL OUTLET	148.98	DEG. F

END SCAN GROUP 1 06 JAN 88 12:54:4

STOPPED SINGLE SCAN 06 JAN 88 12:54:4

BEGIN SCAN GROUP 1 06 JAN 88 13:20:44
60 KW 60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	973.39	DEG. F
C	2	EXHAUST 2	991.51	DEG. F
C	3	EXHAUST 3	1030.7	DEG. F
C	4	EXHAUST 4	1040.7	DEG. F
C	5	EXHAUST 5	995.69	DEG. F
C	6	EXHAUST 6	976.02	DEG. F
C	7	ENG. COOL. IN	158.60	DEG. F
C	8	ENG. COOL. OUT	185.41	DEG. F
C	9	OIL SUMP	181.15	DEG. F
C	10	WATER TEMP/HEAD	189.13	DEG. F
C	11	OIL COOLER IN	200.33	DEG. F
C	12	OIL COOLER OUT	189.31	DEG. F
C	13	ENG. INTAKE	207.46	DEG. F
C	14	RAD. TOP LEFT	143.72	DEG. F
C	15	RAD. BTTM LEFT	137.83	DEG. F
C	16	RAD. TOP RIGHT	137.49	DEG. F
C	17	RAD. BTTM RIGHT	137.40	DEG. F
C	18	GEN. AIR IN	118.32	DEG. F
C	19	GEN. AIR OUT	131.30	DEG. F
C	20	GEN. FRAME TOP	123.00	DEG. F
C	21	GEN. FRAME BTTM	127.62	DEG. F
C	22	GEN. EXCITER	128.59	DEG. F
C	23	GEN. VOLT. REG.	126.45	DEG. F
C	24	CONTROL PANEL	126.42	DEG. F
C	25	RELAY AREA	121.56	DEG. F
C	26	BATTERY LEFT	124.10	DEG. F
C	27	BATTERY RIGHT	124.57	DEG. F
C	28	AIR IN SET	120.82	DEG. F
C	29	FUEL TANK	92.041	DEG. F
C	30	FUEL OUTLET	138.20	DEG. F

END SCAN GROUP 1 06 JAN 88 13:20:54

STOPPED SINGLE SCAN 06 JAN 88 13:20:54

BEGIN SCAN GROUP 1 06 JAN 88 13:26:27
60 KW 60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	903.11	DEG. F
C	2	EXHAUST 2	911.11	DEG. F
C	3	EXHAUST 3	949.75	DEG. F
C	4	EXHAUST 4	969.26	DEG. F
C	5	EXHAUST 5	922.59	DEG. F
C	6	EXHAUST 6	907.32	DEG. F
C	7	ENG. COOL. IN	165.14	DEG. F
C	8	ENG. COOL. OUT	183.41	DEG. F
C	9	OIL SUMP	187.34	DEG. F
C	10	WATER TEMP/HEAD	186.19	DEG. F
C	11	OIL COOLER IN	204.83	DEG. F
C	12	OIL COOLER OUT	193.35	DEG. F
C	13	ENG. INTAKE	197.92	DEG. F
C	14	RAD. TOP LEFT	146.83	DEG. F
C	15	RAD. BTTM LEFT	140.45	DEG. F
C	16	RAD. TOP RIGHT	140.21	DEG. F
C	17	RAD. BTTM RIGHT	140.66	DEG. F
C	18	GEN. AIR IN	117.58	DEG. F
C	19	GEN. AIR OUT	132.85	DEG. F
C	20	GEN. FRAME TOP	126.10	DEG. F
C	21	GEN. FRAME BTTM	130.21	DEG. F
C	22	GEN. EXCITER	131.45	DEG. F
C	23	GEN. VOLT. REG.	127.12	DEG. F
C	24	CONTROL PANEL	127.22	DEG. F
C	25	RELAY AREA	124.66	DEG. F
C	26	BATTERY LEFT	125.29	DEG. F
C	27	BATTERY RIGHT	126.66	DEG. F
C	28	AIR IN SET	120.83	DEG. F
C	29	FUEL TANK	93.298	DEG. F
C	30	FUEL OUTLET	139.98	DEG. F

END SCAN GROUP 1 06 JAN 88 13:26:38

STOPPED SINGLE SCAN 06 JAN 88 13:26:38

BEGIN SCAN GROUP 1 06 JAN 88 13:07:5
60 KW 60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	1032.0	DEG. F
C	2	EXHAUST 2	1056.9	DEG. F
C	3	EXHAUST 3	1101.0	DEG. F
C	4	EXHAUST 4	1117.9	DEG. F
C	5	EXHAUST 5	1089.2	DEG. F
C	6	EXHAUST 6	1052.3	DEG. F
C	7	ENG. COOL. IN	180.45	DEG. F
C	8	ENG. COOL. OUT	194.01	DEG. F
C	9	OIL SUMP	184.63	DEG. F
C	10	WATER TEMP/HEAD	197.90	DEG. F
C	11	OIL COOLER IN	207.16	DEG. F
C	12	OIL COOLER OUT	196.76	DEG. F
C	13	ENG. INTAKE	223.95	DEG. F
C	14	RAD. TOP LEFT	148.16	DEG. F
C	15	RAD. BTTM LEFT	141.19	DEG. F
C	16	RAD. TOP RIGHT	140.28	DEG. F
C	17	RAD. BTTM RIGHT	141.12	DEG. F
C	18	GEN. AIR IN	117.63	DEG. F
C	19	GEN. AIR OUT	131.80	DEG. F
C	20	GEN. FRAME TOP	122.56	DEG. F
C	21	GEN. FRAME BTTM	126.90	DEG. F
C	22	GEN. EXCITER	127.52	DEG. F
C	23	GEN. VOLT. REG.	126.27	DEG. F
C	24	CONTROL PANEL	126.15	DEG. F
C	25	RELAY AREA	121.33	DEG. F
C	26	BATTERY LEFT	122.29	DEG. F
C	27	BATTERY RIGHT	124.00	DEG. F
C	28	AIR IN SET	120.40	DEG. F
C	29	FUEL TANK	89.277	DEG. F
C	30	FUEL OUTLET	138.48	DEG. F

END SCAN GROUP 1 06 JAN 88 13:08:0-

STOPPED SINGLE SCAN 06 JAN 88 13:08:0-

BEGIN SCAN GROUP 1 06 JAN 88 13:10:5
60 KW 60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	983.22	DEG. F
C	2	EXHAUST 2	997.17	DEG. F
C	3	EXHAUST 3	1035.6	DEG. F
C	4	EXHAUST 4	1058.5	DEG. F
C	5	EXHAUST 5	1026.3	DEG. F
C	6	EXHAUST 6	994.42	DEG. F
C	7	ENG. COOL. IN	174.04	DEG. F
C	8	ENG. COOL. OUT	187.61	DEG. F
C	9	OIL SUMP	190.98	DEG. F
C	10	WATER TEMP/HEAD	191.72	DEG. F
C	11	OIL COOLER IN	209.80	DEG. F
C	12	OIL COOLER OUT	197.28	DEG. F
C	13	ENG. INTAKE	212.98	DEG. F
C	14	RAD. TOP LEFT	140.85	DEG. F
C	15	RAD. BTTM LEFT	138.44	DEG. F
C	16	RAD. TOP RIGHT	136.82	DEG. F
C	17	RAD. BTTM RIGHT	138.18	DEG. F
C	18	GEN. AIR IN	115.03	DEG. F
C	19	GEN. AIR OUT	131.36	DEG. F
C	20	GEN. FRAME TOP	124.55	DEG. F
C	21	GEN. FRAME BTTM	127.79	DEG. F
C	22	GEN. EXCITER	128.62	DEG. F
C	23	GEN. VOLT. REG.	126.38	DEG. F
C	24	CONTROL PANEL	126.28	DEG. F
C	25	RELAY AREA	123.37	DEG. F
C	26	BATTERY LEFT	123.91	DEG. F
C	27	BATTERY RIGHT	126.18	DEG. F
C	28	AIR IN SET	119.74	DEG. F
C	29	FUEL TANK	89.813	DEG. F
C	30	FUEL OUTLET	139.05	DEG. F

END SCAN GROUP 1 06 JAN 88 13:11:0-

STOPPED SINGLE SCAN 06 JAN 88 13:11:0-

TEST DATA

ITEM 60 KW / 60 HZ GENERATOR SET MODIFIED

MFGR. KOHLER & ROOT

MODEL NO. MEP 006A

SERIAL NO. DZO 2785

NTS

National Technical Systems | Scientific Services Group | Testing Division P.O. Box 38 Hartwood, Virginia 22471 Tel: 703 752 5300

VOLTAGE DIP & RISE

METHOD 619.2

REF. NO. MIL-STD 705

SHEET 1 OF

DATE 6 JAN 1988

JOB NO. 555-2140

PROJ. ENGR.

RECORDER/OBSERVER KM / BS / GC

INST TIME	STEP NO.	LOAD STEP	E6028D VOLTAGE L_1-L_0 VAC	L_2-L_0 VAC	L_3-L_0 VAC	E6046D AMPERES X 80 L_1-L_0 AC AMPS	L_2-L_0 AC AMPS	L_3-L_0 AC AMPS	E6230D KILOWATTS X PD L_1-L_0 KW	L_2-L_0 KW	L_3-L_0 KW	E6242D POWER FACTOR PF	E6241D FREQ. Hz	E6167D EXCITER VOLTS VDC	E6248D FIELD AMPS DCA	AMB. TEMP. °F	Press inHg/Gal/ IN WATER
1349			START UNIT AT RATED LOAD						START STABILIZATION								
1350		R/L	119.9	119.9	119.5	2.54	2.55	2.55	.25	.251	.251	.80	60.0	12.8	3.2	120	15.4 / 15.4
1400		R/L	119.8	119.8	119.5	2.54	2.55	2.55	.25	.251	.251	.80	60.0	13.4	3.3	123	15.6 / 15.7
1410		R/L	119.9	119.9	119.5	2.54	2.55	2.55	.25	.25	.25	.80	60.0	13.6	3.4	121	16.0 / 15.9
1420		R/L	119.9	119.9	119.5	2.54	2.55	2.55	.25	.251	.251	.80	60.1	13.8	3.4	122	16.0 / 15.6
1425		R/L	120	119.9	119.5	2.54	2.55	2.56	.25	.251	.251	.80	59.5	13.9	3.45	122	15.9 / 15.6
1427		N/L	121.1	121.1	121.1								61.7	5.6	1.4	123	4.0 / 2.6
1428		R/L	120	120	119.5	2.54	2.55	2.56	.25	.256	.251	.80	60.0	13.6	3.4	121	14.3 / 15.2
1429		N/L	121.1	121.1	121.1	2	2	2					61.5	5.8	1.4	120	3.4 / 2.4
1430		R/L	120	119.9	119.5	2.54	2.55	2.56	.25	.251	.251	.80	59.9	13.5	3.4	121	14.4 / 15.1
1431		N/L	121.1	121.1	121.1								61.6	5.8	1.4	120	3.2 / 2.9
1433		R/L	119.9	119.9	119.5	2.54	2.55	2.56	.25	.251	.251	.80	59.9	13.4	3.35	120	14.3 / 15.3
1436			END OF TEST				SHUT UNIT DOWN										

NOTES:

TEST DATA

ITEM: 60 kW, 60 Hz Generator Set Modified

MFGR. Libby Welding

MODEL NO. MEP 004A

SERIAL NO. RZ2 3161

NTS

National Technical Systems — Scientific Services Group — Testing Division, PO Box 38, Hartwood, Virginia 22471, Tel: 703 752 5300

Voltage Dip & Rise Computation Results

REF. NO. Mil Std 705; 619.2B

SHEET 1 OF 1

DATE 19 Jan 88

JOB NO. 555-2140

PROJ. ENGR.

RECORDER/OBSERVER

INST. →												
Time ↓	Step		Dip to %	Dip to Volts		Rise to %	Rise to Volts		Recovery sec			
UNITS												
SYM.												
	1					111.036	132.743		.367			
	2		87.350	105.92					.440			
	3					111.517	133.316		.384			
	4		93.259	113.011					.370			
60	5					111.956	133.847		.493			
1	6		90.482	109.678					.352			
NC												

NOTES:

Voltage D.O & Rise Test; Method 619.2

BEGIN SCAN GROUP 1 06 JAN 88 13:50:09
60 KW 60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	1048.9	DEG. F
C	2	EXHAUST 2	1072.7	DEG. F
C	3	EXHAUST 3	1116.6	DEG. F
C	4	EXHAUST 4	1135.1	DEG. F
C	5	EXHAUST 5	1104.6	DEG. F
C	6	EXHAUST 6	1069.4	DEG. F
C	7	ENG. COOL. IN	182.55	DEG. F
C	8	ENG. COOL. OUT	195.64	DEG. F
C	9	OIL SUMP	184.66	DEG. F
C	10	WATER TEMP/HEAD	199.21	DEG. F
C	11	OIL COOLER IN	205.11	DEG. F
C	12	OIL COOLER OUT	195.92	DEG. F
C	13	ENG. INTAKE	230.91	DEG. F
C	14	RAD. TOP LEFT	151.56	DEG. F
C	15	RAD. BTTM LEFT	145.36	DEG. F
C	16	RAD. TOP RIGHT	140.52	DEG. F
C	17	RAD. BTTM RIGHT	142.70	DEG. F
C	18	GEN. AIR IN	115.61	DEG. F
C	19	GEN. AIR OUT	133.91	DEG. F
C	20	GEN. FRAME TOP	127.54	DEG. F
C	21	GEN. FRAME BTTM	131.06	DEG. F
C	22	GEN. EXCITER	131.46	DEG. F
C	23	GEN. VOLT. REG.	131.19	DEG. F
C	24	CONTROL PANEL	131.43	DEG. F
C	25	RELAY AREA	126.71	DEG. F
C	26	BATTERY LEFT	116.88	DEG. F
C	27	BATTERY RIGHT	122.44	DEG. F
C	28	AIR IN SET	120.42	DEG. F
C	29	FUEL TANK	95.955	DEG. F
C	30	FUEL OUTLET	140.62	DEG. F

END SCAN GROUP 1 06 JAN 88 13:50:19

STOPPED SINGLE SCAN 06 JAN 88 13:50:19

BEGIN SCAN GROUP 1 06 JAN 88 14:00:19
60 KW 60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	1091.7	DEG. F
C	2	EXHAUST 2	1100.9	DEG. F
C	3	EXHAUST 3	1141.8	DEG. F
C	4	EXHAUST 4	1172.7	DEG. F
C	5	EXHAUST 5	1167.0	DEG. F
C	6	EXHAUST 6	1110.8	DEG. F
C	7	ENG. COOL. IN	192.25	DEG. F
C	8	ENG. COOL. OUT	207.97	DEG. F
C	9	OIL SUMP	209.72	DEG. F
C	10	WATER TEMP/HEAD	214.01	DEG. F
C	11	OIL COOLER IN	230.61	DEG. F
C	12	OIL COOLER OUT	215.84	DEG. F
C	13	ENG. INTAKE	238.96	DEG. F
C	14	RAD. TOP LEFT	152.76	DEG. F
C	15	RAD. BTTM LEFT	143.43	DEG. F
C	16	RAD. TOP RIGHT	139.71	DEG. F
C	17	RAD. BTTM RIGHT	142.33	DEG. F
C	18	GEN. AIR IN	114.86	DEG. F
C	19	GEN. AIR OUT	135.52	DEG. F
C	20	GEN. FRAME TOP	127.23	DEG. F
C	21	GEN. FRAME BTTM	130.22	DEG. F
C	22	GEN. EXCITER	133.26	DEG. F
C	23	GEN. VOLT. REG.	128.93	DEG. F
C	24	CONTROL PANEL	129.23	DEG. F
C	25	RELAY AREA	126.35	DEG. F
C	26	BATTERY LEFT	127.28	DEG. F
C	27	BATTERY RIGHT	126.55	DEG. F
C	28	AIR IN SET	123.25	DEG. F
C	29	FUEL TANK	97.620	DEG. F
C	30	FUEL OUTLET	140.04	DEG. F

END SCAN GROUP 1 06 JAN 88 14:00:29

STOPPED SINGLE SCAN 06 JAN 88 14:00:29

BEGIN SCAN GROUP 1 06 JAN 88 14:10:1
60 KW 60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	1084.7	DEG. F
C	2	EXHAUST 2	1101.1	DEG. F
C	3	EXHAUST 3	1146.5	DEG. F
C	4	EXHAUST 4	1173.1	DEG. F
C	5	EXHAUST 5	1168.2	DEG. F
C	6	EXHAUST 6	1112.5	DEG. F
C	7	ENG. COOL. IN	194.73	DEG. F
C	8	ENG. COOL. OUT	210.81	DEG. F
C	9	OIL SUMP	215.72	DEG. F
C	10	WATER TEMP/HEAD	217.11	DEG. F
C	11	OIL COOLER IN	234.94	DEG. F
C	12	OIL COOLER OUT	219.53	DEG. F
C	13	ENG. INTAKE	239.62	DEG. F
C	14	RAD. TOP LEFT	153.83	DEG. F
C	15	RAD. BTTM LEFT	144.09	DEG. F
C	16	RAD. TOP RIGHT	140.51	DEG. F
C	17	RAD. BTTM RIGHT	143.70	DEG. F
C	18	GEN. AIR IN	115.13	DEG. F
C	19	GEN. AIR OUT	136.92	DEG. F
C	20	GEN. FRAME TOP	127.27	DEG. F
C	21	GEN. FRAME BTTM	131.38	DEG. F
C	22	GEN. EXCITER	133.46	DEG. F
C	23	GEN. VOLT. REG.	128.56	DEG. F
C	24	CONTROL PANEL	128.73	DEG. F
C	25	RELAY AREA	126.27	DEG. F
C	26	BATTERY LEFT	129.15	DEG. F
C	27	BATTERY RIGHT	128.32	DEG. F
C	28	AIR IN SET	121.16	DEG. F
C	29	FUEL TANK	99.524	DEG. F
C	30	FUEL OUTLET	139.93	DEG. F

END SCAN GROUP 1 06 JAN 88 14:10:2

STOPPED SINGLE SCAN 06 JAN 88 14:10:2

BEGIN SCAN GROUP 1 06 JAN 88 14:20:3
60 KW 60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	1093.9	DEG. F
C	2	EXHAUST 2	1102.7	DEG. F
C	3	EXHAUST 3	1151.9	DEG. F
C	4	EXHAUST 4	1175.8	DEG. F
C	5	EXHAUST 5	1173.7	DEG. F
C	6	EXHAUST 6	1113.5	DEG. F
C	7	ENG. COOL. IN	195.69	DEG. F
C	8	ENG. COOL. OUT	211.82	DEG. F
C	9	OIL SUMP	215.62	DEG. F
C	10	WATER TEMP/HEAD	217.98	DEG. F
C	11	OIL COOLER IN	236.05	DEG. F
C	12	OIL COOLER OUT	220.51	DEG. F
C	13	ENG. INTAKE	240.41	DEG. F
C	14	RAD. TOP LEFT	154.95	DEG. F
C	15	RAD. BTTM LEFT	145.41	DEG. F
C	16	RAD. TOP RIGHT	141.00	DEG. F
C	17	RAD. BTTM RIGHT	144.73	DEG. F
C	18	GEN. AIR IN	117.18	DEG. F
C	19	GEN. AIR OUT	138.81	DEG. F
C	20	GEN. FRAME TOP	128.13	DEG. F
C	21	GEN. FRAME BTTM	132.82	DEG. F
C	22	GEN. EXCITER	133.81	DEG. F
C	23	GEN. VOLT. REG.	128.57	DEG. F
C	24	CONTROL PANEL	128.66	DEG. F
C	25	RELAY AREA	126.98	DEG. F
C	26	BATTERY LEFT	129.51	DEG. F
C	27	BATTERY RIGHT	128.44	DEG. F
C	28	AIR IN SET	122.61	DEG. F
C	29	FUEL TANK	101.46	DEG. F
C	30	FUEL OUTLET	138.93	DEG. F

END SCAN GROUP 1 06 JAN 88 14:20:4

STOPPED SINGLE SCAN 06 JAN 88 14:20:4

BEGIN SCAN GROUP 1 06 JAN 88 14:25:17
60 KW/60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	1096.3	DEG. F
C	2	EXHAUST 2	1107.5	DEG. F
C	3	EXHAUST 3	1154.1	DEG. F
C	4	EXHAUST 4	1174.6	DEG. F
C	5	EXHAUST 5	1173.8	DEG. F
C	6	EXHAUST 6	1115.4	DEG. F
C	7	ENG. COOL. IN	195.95	DEG. F
C	8	ENG. COOL. OUT	212.15	DEG. F
C	9	OIL SUMP	216.23	DEG. F
C	10	WATER TEMP/HEAD	218.46	DEG. F
C	11	OIL COOLER IN	236.39	DEG. F
C	12	OIL COOLER OUT	220.84	DEG. F
C	13	ENG. INTAKE	240.86	DEG. F
C	14	RAD. TOP LEFT	155.13	DEG. F
C	15	RAD. BTTM LEFT	145.28	DEG. F
C	16	RAD. TOP RIGHT	140.79	DEG. F
C	17	RAD. BTTM RIGHT	144.01	DEG. F
C	18	GEN. AIR IN	117.57	DEG. F
C	19	GEN. AIR OUT	139.30	DEG. F
C	20	GEN. FRAME TOP	128.60	DEG. F
C	21	GEN. FRAME BTTM	133.33	DEG. F
C	22	GEN. EXCITER	134.18	DEG. F
C	23	GEN. VOLT. REG.	128.60	DEG. F
C	24	CONTROL PANEL	128.77	DEG. F
C	25	RELAY AREA	127.28	DEG. F
C	26	BATTERY LEFT	129.79	DEG. F
C	27	BATTERY RIGHT	128.33	DEG. F
C	28	AIR IN SET	123.06	DEG. F
C	29	FUEL TANK	102.19	DEG. F
C	30	FUEL OUTLET	138.47	DEG. F

END SCAN GROUP 1 06 JAN 88 14:25:27

STOPPED SINGLE SCAN 06 JAN 88 14:25:27

BEGIN SCAN GROUP 1 06 JAN 88 14:28:3
60 KW/60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	888.16	DEG. F
C	2	EXHAUST 2	883.33	DEG. F
C	3	EXHAUST 3	921.60	DEG. F
C	4	EXHAUST 4	950.29	DEG. F
C	5	EXHAUST 5	927.46	DEG. F
C	6	EXHAUST 6	893.51	DEG. F
C	7	ENG. COOL. IN	180.62	DEG. F
C	8	ENG. COOL. OUT	192.72	DEG. F
C	9	OIL SUMP	209.26	DEG. F
C	10	WATER TEMP/HEAD	198.04	DEG. F
C	11	OIL COOLER IN	225.73	DEG. F
C	12	OIL COOLER OUT	209.70	DEG. F
C	13	ENG. INTAKE	199.99	DEG. F
C	14	RAD. TOP LEFT	149.50	DEG. F
C	15	RAD. BTTM LEFT	141.66	DEG. F
C	16	RAD. TOP RIGHT	138.34	DEG. F
C	17	RAD. BTTM RIGHT	140.91	DEG. F
C	18	GEN. AIR IN	116.70	DEG. F
C	19	GEN. AIR OUT	136.87	DEG. F
C	20	GEN. FRAME TOP	128.20	DEG. F
C	21	GEN. FRAME BTTM	132.70	DEG. F
C	22	GEN. EXCITER	133.40	DEG. F
C	23	GEN. VOLT. REG.	128.76	DEG. F
C	24	CONTROL PANEL	128.59	DEG. F
C	25	RELAY AREA	126.03	DEG. F
C	26	BATTERY LEFT	129.38	DEG. F
C	27	BATTERY RIGHT	127.81	DEG. F
C	28	AIR IN SET	121.43	DEG. F
C	29	FUEL TANK	102.68	DEG. F
C	30	FUEL OUTLET	144.07	DEG. F

END SCAN GROUP 1 06 JAN 88 14:28:4

STOPPED SINGLE SCAN 06 JAN 88 14:28:4

BEGIN SCAN GROUP 1 06 JAN 88 14:27:00
60 KW/60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	652.09	DEG. F
C	2	EXHAUST 2	610.86	DEG. F
C	3	EXHAUST 3	634.94	DEG. F
C	4	EXHAUST 4	681.00	DEG. F
C	5	EXHAUST 5	704.09	DEG. F
C	6	EXHAUST 6	637.58	DEG. F
C	7	ENG. COOL. IN	193.33	DEG. F
C	8	ENG. COOL. OUT	206.58	DEG. F
C	9	OIL SUMP	218.45	DEG. F
C	10	WATER TEMP/HEAD	213.51	DEG. F
C	11	OIL COOLER IN	235.10	DEG. F
C	12	OIL COOLER OUT	219.62	DEG. F
C	13	ENG. INTAKE	138.60	DEG. F
C	14	RAD. TOP LEFT	153.73	DEG. F
C	15	RAD. BTTM LEFT	144.63	DEG. F
C	16	RAD. TOP RIGHT	140.34	DEG. F
C	17	RAD. BTTM RIGHT	143.46	DEG. F
C	18	GEN. AIR IN	117.34	DEG. F
C	19	GEN. AIR OUT	138.77	DEG. F
C	20	GEN. FRAME TOP	128.68	DEG. F
C	21	GEN. FRAME BTTM	133.44	DEG. F
C	22	GEN. EXCITER	134.09	DEG. F
C	23	GEN. VOLT. REG.	128.68	DEG. F
C	24	CONTROL PANEL	128.78	DEG. F
C	25	RELAY AREA	127.24	DEG. F
C	26	BATTERY LEFT	130.04	DEG. F
C	27	BATTERY RIGHT	128.85	DEG. F
C	28	AIR IN SET	123.75	DEG. F
C	29	FUEL TANK	102.58	DEG. F
C	30	FUEL OUTLET	138.61	DEG. F

END SCAN GROUP 1 06 JAN 88 14:27:10

STOPPED SINGLE SCAN 06 JAN 88 14:27:10

BEGIN SCAN GROUP 1 06 JAN 88 14:29:4
60 KW/60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	882.54	DEG. F
C	2	EXHAUST 2	884.58	DEG. F
C	3	EXHAUST 3	915.34	DEG. F
C	4	EXHAUST 4	938.97	DEG. F
C	5	EXHAUST 5	950.73	DEG. F
C	6	EXHAUST 6	891.31	DEG. F
C	7	ENG. COOL. IN	183.26	DEG. F
C	8	ENG. COOL. OUT	196.97	DEG. F
C	9	OIL SUMP	204.89	DEG. F
C	10	WATER TEMP/HEAD	202.18	DEG. F
C	11	OIL COOLER IN	224.55	DEG. F
C	12	OIL COOLER OUT	209.33	DEG. F
C	13	ENG. INTAKE	213.22	DEG. F
C	14	RAD. TOP LEFT	149.19	DEG. F
C	15	RAD. BTTM LEFT	141.51	DEG. F
C	16	RAD. TOP RIGHT	138.21	DEG. F
C	17	RAD. BTTM RIGHT	141.22	DEG. F
C	18	GEN. AIR IN	115.39	DEG. F
C	19	GEN. AIR OUT	136.94	DEG. F
C	20	GEN. FRAME TOP	127.83	DEG. F
C	21	GEN. FRAME BTTM	132.52	DEG. F
C	22	GEN. EXCITER	132.81	DEG. F
C	23	GEN. VOLT. REG.	128.58	DEG. F
C	24	CONTROL PANEL	128.54	DEG. F
C	25	RELAY AREA	125.27	DEG. F
C	26	BATTERY LEFT	129.41	DEG. F
C	27	BATTERY RIGHT	127.47	DEG. F
C	28	AIR IN SET	120.13	DEG. F
C	29	FUEL TANK	102.88	DEG. F
C	30	FUEL OUTLET	141.93	DEG. F

END SCAN GROUP 1 06 JAN 88 14:29:5

STOPPED SINGLE SCAN 06 JAN 88 14:29:5

BEGIN SCAN GROUP 1 06 JAN 88 14:30:57
60 KW/60HZ GEN SET S/N DZD 2785

C	1	EXHAUST 1	822.85	DEG. F
C	2	EXHAUST 2	821.05	DEG. F
C	3	EXHAUST 3	858.83	DEG. F
C	4	EXHAUST 4	892.10	DEG. F
C	5	EXHAUST 5	866.41	DEG. F
C	6	EXHAUST 6	832.21	DEG. F
C	7	ENG. COOL. IN	177.44	DEG. F
C	8	ENG. COOL. OUT	189.27	DEG. F
C	9	OIL SUMP	203.38	DEG. F
C	10	WATER TEMP/HEAD	194.37	DEG. F
C	11	OIL COOLER IN	228.05	DEG. F
C	12	OIL COOLER OUT	205.17	DEG. F
C	13	ENG. INTAKE	193.18	DEG. F
C	14	RAD. TOP LEFT	146.72	DEG. F
C	15	RAD. BTTM LEFT	148.13	DEG. F
C	16	RAD. TOP RIGHT	137.19	DEG. F
C	17	RAD. BTTM RIGHT	139.74	DEG. F
C	18	GEN. AIR IN	115.65	DEG. F
C	19	GEN. AIR OUT	135.57	DEG. F
C	20	GEN. FRAME TOP	127.72	DEG. F
C	21	GEN. FRAME BTTM	132.12	DEG. F
C	22	GEN. EXCITER	132.38	DEG. F
C	23	GEN. VOLT. REG.	128.64	DEG. F
C	24	CONTROL PANEL	128.45	DEG. F
C	25	RELAY AREA	125.18	DEG. F
C	26	BATTERY LEFT	129.15	DEG. F
C	27	BATTERY RIGHT	127.38	DEG. F
C	28	AIR IN SET	121.85	DEG. F
C	29	FUEL TANK	103.21	DEG. F
C	30	FUEL OUTLET	142.60	DEG. F

END SCAN GROUP 1 06 JAN 88 14:31:07

STOPPED SINGLE SCAN 06 JAN 88 14:31:07

BEGIN SCAN GROUP 1 06 JAN 88 14:32:31
60 KW/60HZ GEN SET S/N DZD 2785

C	1	EXHAUST 1	664.17	DEG. F
C	2	EXHAUST 2	648.18	DEG. F
C	3	EXHAUST 3	649.67	DEG. F
C	4	EXHAUST 4	689.86	DEG. F
C	5	EXHAUST 5	703.51	DEG. F
C	6	EXHAUST 6	656.56	DEG. F
C	7	ENG. COOL. IN	180.42	DEG. F
C	8	ENG. COOL. OUT	192.89	DEG. F
C	9	OIL SUMP	200.86	DEG. F
C	10	WATER TEMP/HEAD	198.38	DEG. F
C	11	OIL COOLER IN	219.91	DEG. F
C	12	OIL COOLER OUT	205.63	DEG. F
C	13	ENG. INTAKE	185.03	DEG. F
C	14	RAD. TOP LEFT	146.67	DEG. F
C	15	RAD. BTTM LEFT	148.88	DEG. F
C	16	RAD. TOP RIGHT	136.88	DEG. F
C	17	RAD. BTTM RIGHT	139.46	DEG. F
C	18	GEN. AIR IN	115.52	DEG. F
C	19	GEN. AIR OUT	135.96	DEG. F
C	20	GEN. FRAME TOP	127.17	DEG. F
C	21	GEN. FRAME BTTM	132.03	DEG. F
C	22	GEN. EXCITER	131.88	DEG. F
C	23	GEN. VOLT. REG.	128.38	DEG. F
C	24	CONTROL PANEL	128.17	DEG. F
C	25	RELAY AREA	124.56	DEG. F
C	26	BATTERY LEFT	128.75	DEG. F
C	27	BATTERY RIGHT	127.04	DEG. F
C	28	AIR IN SET	121.28	DEG. F
C	29	FUEL TANK	103.37	DEG. F
C	30	FUEL OUTLET	139.01	DEG. F

END SCAN GROUP 1 06 JAN 88 14:32:41

STOPPED SINGLE SCAN 06 JAN 88 14:32:41

BEGIN SCAN GROUP 1 06 JAN 88 14:33:27
60 KW/60HZ GEN SET S/N DZD 2785

C	1	EXHAUST 1	761.26	DEG. F
C	2	EXHAUST 2	744.81	DEG. F
C	3	EXHAUST 3	786.71	DEG. F
C	4	EXHAUST 4	822.09	DEG. F
C	5	EXHAUST 5	798.85	DEG. F
C	6	EXHAUST 6	767.13	DEG. F
C	7	ENG. COOL. IN	174.91	DEG. F
C	8	ENG. COOL. OUT	186.65	DEG. F
C	9	OIL SUMP	200.35	DEG. F
C	10	WATER TEMP/HEAD	191.72	DEG. F
C	11	OIL COOLER IN	216.22	DEG. F
C	12	OIL COOLER OUT	202.02	DEG. F
C	13	ENG. INTAKE	184.44	DEG. F
C	14	RAD. TOP LEFT	144.57	DEG. F
C	15	RAD. BTTM LEFT	138.64	DEG. F
C	16	RAD. TOP RIGHT	135.79	DEG. F
C	17	RAD. BTTM RIGHT	134.54	DEG. F
C	18	GEN. AIR IN	114.87	DEG. F
C	19	GEN. AIR OUT	134.73	DEG. F
C	20	GEN. FRAME TOP	127.18	DEG. F
C	21	GEN. FRAME BTTM	131.51	DEG. F
C	22	GEN. EXCITER	131.56	DEG. F
C	23	GEN. VOLT. REG.	128.38	DEG. F
C	24	CONTROL PANEL	128.03	DEG. F
C	25	RELAY AREA	124.23	DEG. F
C	26	BATTERY LEFT	128.62	DEG. F
C	27	BATTERY RIGHT	126.72	DEG. F
C	28	AIR IN SET	120.62	DEG. F
C	29	FUEL TANK	103.56	DEG. F
C	30	FUEL OUTLET	141.96	DEG. F

END SCAN GROUP 1 06 JAN 88 14:33:37

STOPPED SINGLE SCAN 06 JAN 88 14:33:37

TEST DATA

ITEM 60 KW / 60 HZ GENERATOR SET MODIFIED

MFGR. KURZ & KOT

MODEL NO. MEP 006A

SERIAL NO. DZO 2785

NTS

National Technical Systems | Scientific Services Group | Testing Division P.O. Box 38 Hartwood, Virginia 22471 Tel: 703 752 5300

METHOD 512.3

CIRCUIT INTERRUPTER TEST (COVER VOLTAGE)

REF. NO. MIL STD 705

SHEET 1 OF 1

DATE 6 JAN 1988

JOB NO. 555-2140

PROJ. ENGR.

RECORDER/OBSERVER KM/BJ/GC

TIME	STEP NO.	EG0780 EG2240 VOLTAGE #1	VOLTAGE #2		EG2410 FREQ HZ		Ambient Temp
1649		START UNIT					
1651		SHUT UNIT DOWN TO CHANGE INSTRUMENTATION LEAD					
1653		RESTART UNIT					
1700	1	155	120		60.2	CIRCUIT INTERRUPTER OPENED UNIT SHUT DOWN O.V. LIGHT ON	120
1701	2	155	120		60.2	SAME AS # 1	122
1702	3	155	120		60.2	SAME AS # 1	122
1702				END	OF TEST		

18 January 1988

Calculated Time for Interrupter to open

1 709.75 ms

2 718.10 ms

3 726.45 ms

NOTES:

TEST DATA

ITEM 60 Kw / 60 HZ GENERATOR SET MODIFIED

MFGR. KURZ & KOST

MODEL NO. MEP 006A

SERIAL NO. DZO 2785

NTS

National Technical Systems Scientific Services Group

Testing Division
PO Box 38
Hartwood, Virginia 22471
Tel: 703 752 5300

WINDING RESISTANCE HIGH TEMP

REF. NO. MIL-STD 705; 401.1A

SHEET 1 OF 1

DATE 7 JAN 1988

JOB NO. 555-2140

PROJ. ENGR.

RECORDER/OBSERVER KM / BJ / GC

INST TIME	STEP NO.	LOAD STEP	E6028D VOLTAGE L_1-L_0 VAC	L_2-L_0 VAC	L_3-L_0 VAC	E6040D AMPERES X 80 L_1-L_0 AC AMPS	L_2-L_0 AC AMPS	L_3-L_0 AC AMPS	E6230D KILOWATTS X 5 L_1-L_0 Kw	L_2-L_0 Kw	L_3-L_0 Kw	E6242D POWER FACTOR PF	E6241D FREQ. Hz	E6167D EXCITER VOLTS VDC	E6248D FIELD AMPS DCA	AMB. TEMP. °F	Press IN H	Press WATER
1432			START UNIT															
1435			SHUT UNIT Down			FOR INSTRUMENT CHECK												
1436			RESTART UNIT			APPLIED RATED			LOAD START STABILIZATION									
1445		R/L	120	120	119.5	2.54	2.55	2.55	.25	.251	.251	.80	60.2	13.6	3.2	119	16.0	16.0
1455		R/L	120	120	119.5	2.54	2.55	2.55	.25	.251	.251	.80	60.2	13.0	3.3	121	16.0	16.0
1505		R/L	120	120	119.5	2.54	2.55	2.55	.25	.251	.251	.80	60.2	13.3	3.35	120	15.9	15.9
1514		R/L	120	120	119.5	2.54	2.55	2.55	.25	.251	.251	.80	60.0	13.5	3.4	120	16.1	15.9
				ABORTED			TEST											
1542			RESTART UNIT			AT RATED LOAD			START STABILIZATION FOR TEST									
1545		R/L	120	120	119.5	2.54	2.56	2.56	.25	.251	.251	.80	60.0	13.3	3.37	121	16.0	15.9
1555		R/L	120	120	119.5	2.54	2.56	2.56	.25	.251	.251	.80	59.9	13.6	3.4	121	15.9	15.9
1605		R/L	120	120	119.5	2.55	2.55	2.56	.25	.251	.251	.80	59.9	13.8	3.45	120	16.0	15.9
1615		R/L	120	120	119.5	2.54	2.56	2.56	.25	.251	.251	.80	59.9	13.8	3.5	121	16.1	15.9
1616			SHUT UNIT			Down												
1621			END OF TEST															

NOTES:

TEST DATA

ITEM 60 kW, 60 Hz Generator Set Modified

MFGR. Kurz + Root

MODEL NO. MEP 006A

SERIAL NO. DZO 2785

NTAS

National Technical Systems | Scientific Services Group | Testing Division, PO Box 30, Hallwood, Virginia 22471, Tel 703 752 5300

WINDING RESISTANCE TEST

REF. NO. Mil. Std. 705

SHEET 1 OF 2

DATE 7 Jun 1988

JOB NO. 555-2140

PROJ. ENGR.

RECORDER/OBSERVER km/BJ/GC

TEST READ NO	TIME HRS	DIAL READING	MULTIPLIER	LEAD RESISTANCE	WINDING RESIS. OHMS	WINDING		WINDING RESIS. CORR TO 60°F 25°C	AVG. AMBIENT TEMP.
	1617	31.3	10^{-3}	0.0000	0.0313	T1	T4	0.0287	120°F (48.8°C)
		31.2	10^{-3}		0.0312	T2	T5	0.0286	
		31.0	10^{-3}		0.0310	T3	T6	0.0284	
		30.7	10^{-3}		0.0307	T7	T10	0.0281	
		31.1	10^{-3}		0.0311	T8	T11	0.0285	
		31.0	10^{-3}		0.0310	T9	T12	0.0284	
		3.5	1		3.5	F1	F2	3.21	
		31.2	10^{-3}		0.0312	T1	T4	0.0286	
		30.9	10^{-3}		0.0309	T2	T5	0.0283	
		30.7	10^{-3}		0.0307	T3	T6	0.0281	
		30.6	10^{-3}		0.0306	T7	T10	0.0280	
		31.1	10^{-3}		0.0311	T8	T11	0.0285	
		30.9	10^{-3}		0.0304	T9	T12	0.0283	
		3.5	1		3.5	F1	F2	3.21	
		31.6	10^{-3}		0.0316	T1	T4	0.0289	
		30.9	10^{-3}		0.0309	T2	T5	0.0283	
		30.8	10^{-3}		0.0308	T3	T6	0.0282	
		30.6	10^{-3}		0.0306	T7	T10	0.0280	
		31.0	10^{-3}		0.0310	T8	T11	0.0284	
		30.8	10^{-3}		0.0308	T9	T12	0.0282	
		3.5	1		3.5	F1	F2	3.21	
		30.8	10^{-3}		0.0308	T1	T4	0.0282	
		30.9	10^{-3}		0.0309	T2	T5	0.0283	
		30.9	10^{-3}		0.0309	T3	T6	0.0283	
		30.5	10^{-3}		0.0305	T7	T10	0.0279	
		31.0	10^{-3}		0.0310	T8	T11	0.0284	
		38.8	10^{-3}		0.0388	T9	T12	0.0355	

NOTES: 4TH READING OF T9 – T12 (38.8) IS UNVERIFIED DATA

TEST DATA

ITEM 60 KW, 60 HZ Generator Set Modified

DESCR. Kurz + Root

MODEL NO. M4P 006A

SERIAL NO. DZO 2785

NTS

National Technical Systems

Scientific Testing Division
PO Box 38
Hollywood Virginia 22471
Tel 703 752 5300

WINDING RESISTANCE TEST

REF. NO. Mil Std. 705

SHEET 2 OF 2

DATE 7 JAN 1983

JOB NO. 555-2140

PROJ. ENGR.

RECORDER/OBSERVER KM/BU/GC

TEST READ NO UNITS	TIME HRS	DIAL READING	MULTIPLIER	LEAD RESISTANCE	WINDING RESIS. OHMS	WINDING		WINDING RESIS. CORR TO 60°F	AVG. AMBIENT TEMP.
		3.4	1	0.0000	3.4	F1	F2	3.11	120°F (48.8°C)
		30.7	10^{-3}		0.0307	T1	T4	0.0281	
		30.8	10^{-3}		0.0308	T2	T5	0.0282	
		30.6	10^{-3}		0.0306	T3	T6	0.0280	
		30.5	10^{-3}		0.0305	T7	T10	0.0279	
		30.9	10^{-3}		0.0309	T8	T11	0.0283	
		30.7	10^{-3}		0.0307	T9	T12	0.0281	
		3.4	1		3.4	F1	F2	3.11	
		30.5	10^{-3}		0.0305	T1	T4	0.0279	
		30.9	10^{-3}		0.0309	T2	T5	0.0283	
		30.7	10^{-3}		0.0307	T3	T6	0.0281	
		30.5	10^{-3}		0.0305	T7	T10	0.0279	
		30.9	10^{-3}		0.0309	T8	T11	0.0283	
		30.8	10^{-3}		0.0308	T9	T12	0.0282	
		3.4	1		3.4	F1	F2	3.11	

(1-81)

NOTES:

TEST DATA

ITEM 60 KW, 60 HZ Generator Set Modified

MFGR. Kurz & Root

MODEL NO. MEP 006A

SERIAL NO. D20 2785

NTS National Technical Systems — Scientific Services Group — Testing Division, PO Box 30, Hardwood, Virginia 22471, Tel 703 752 5300

Ambient

WINDING RESISTANCE TEST

REF. NO. MIL STD 705

SHEET 1 OF 1

DATE 8 Jan 1988

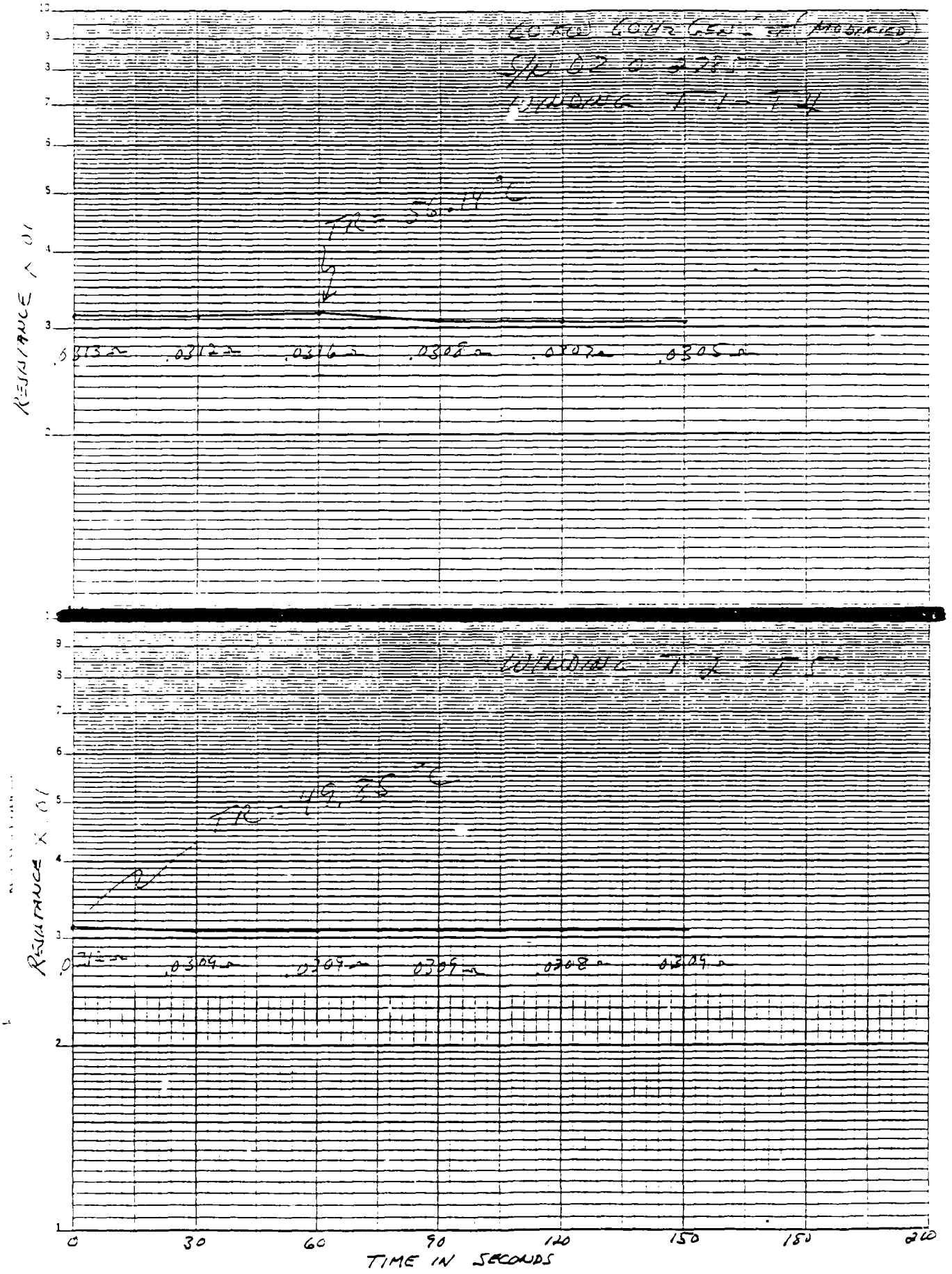
JOB NO. 555-2140

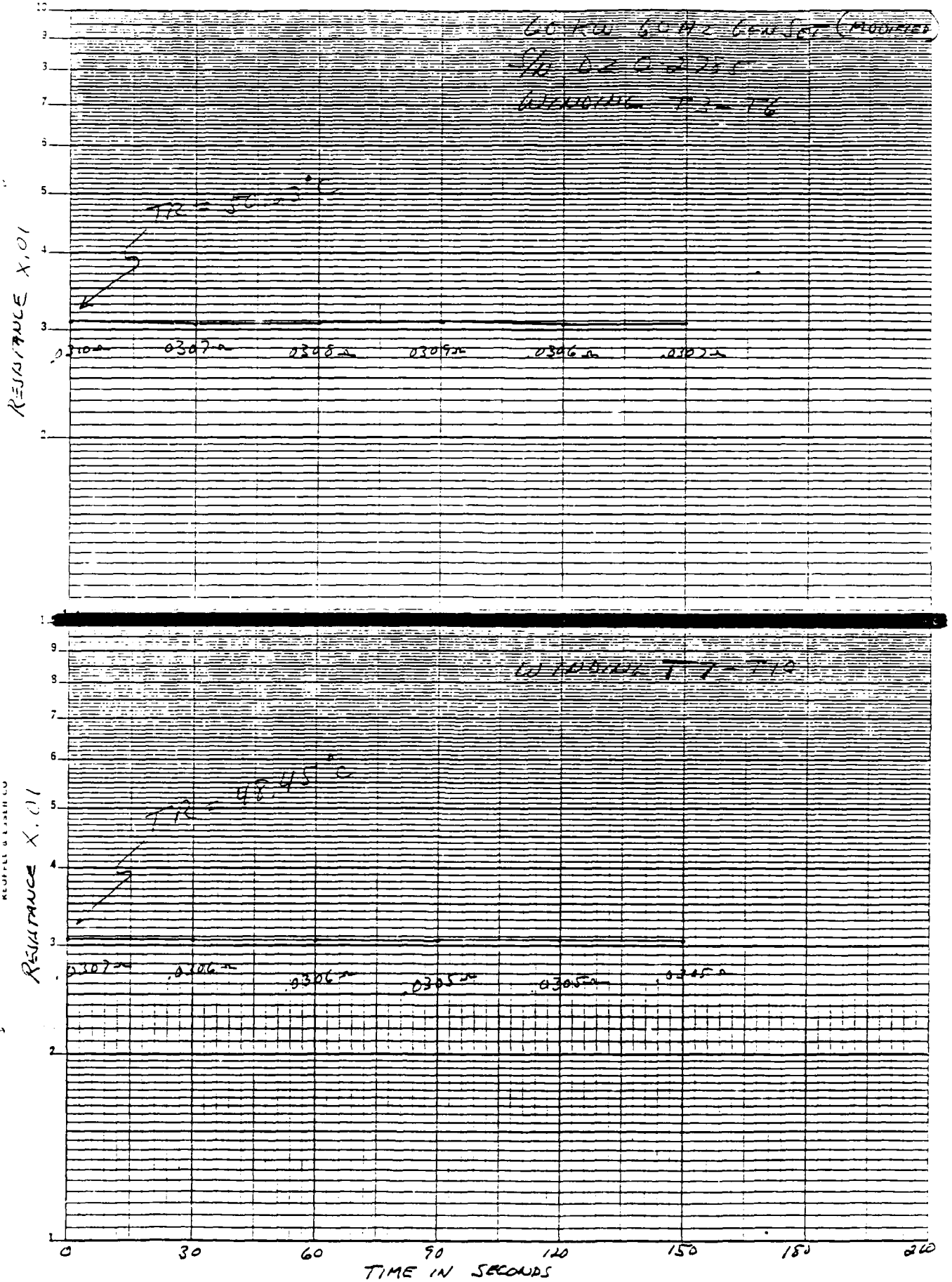
PROJ. ENGR.

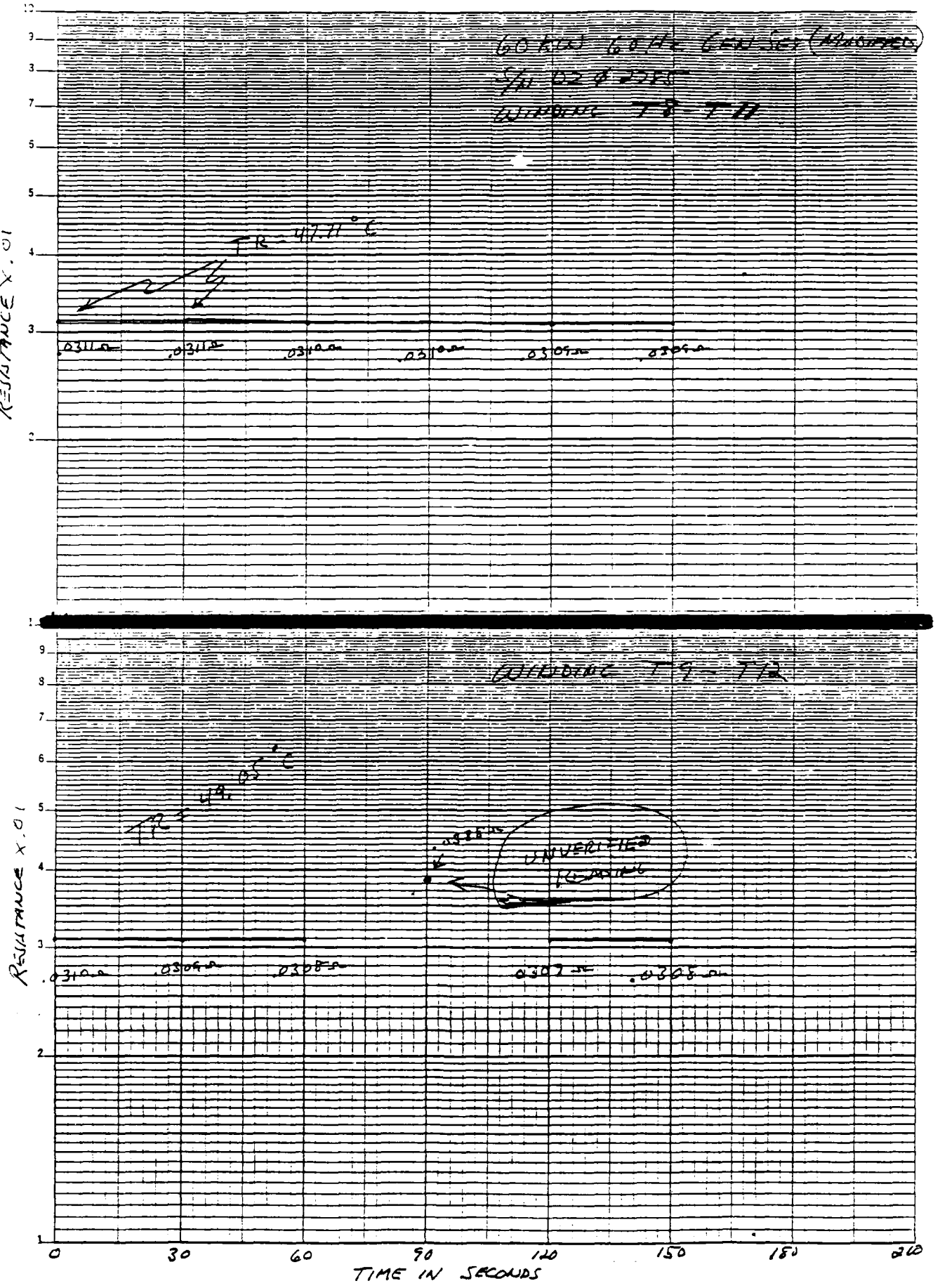
RECORDER/OBSERVER km/km

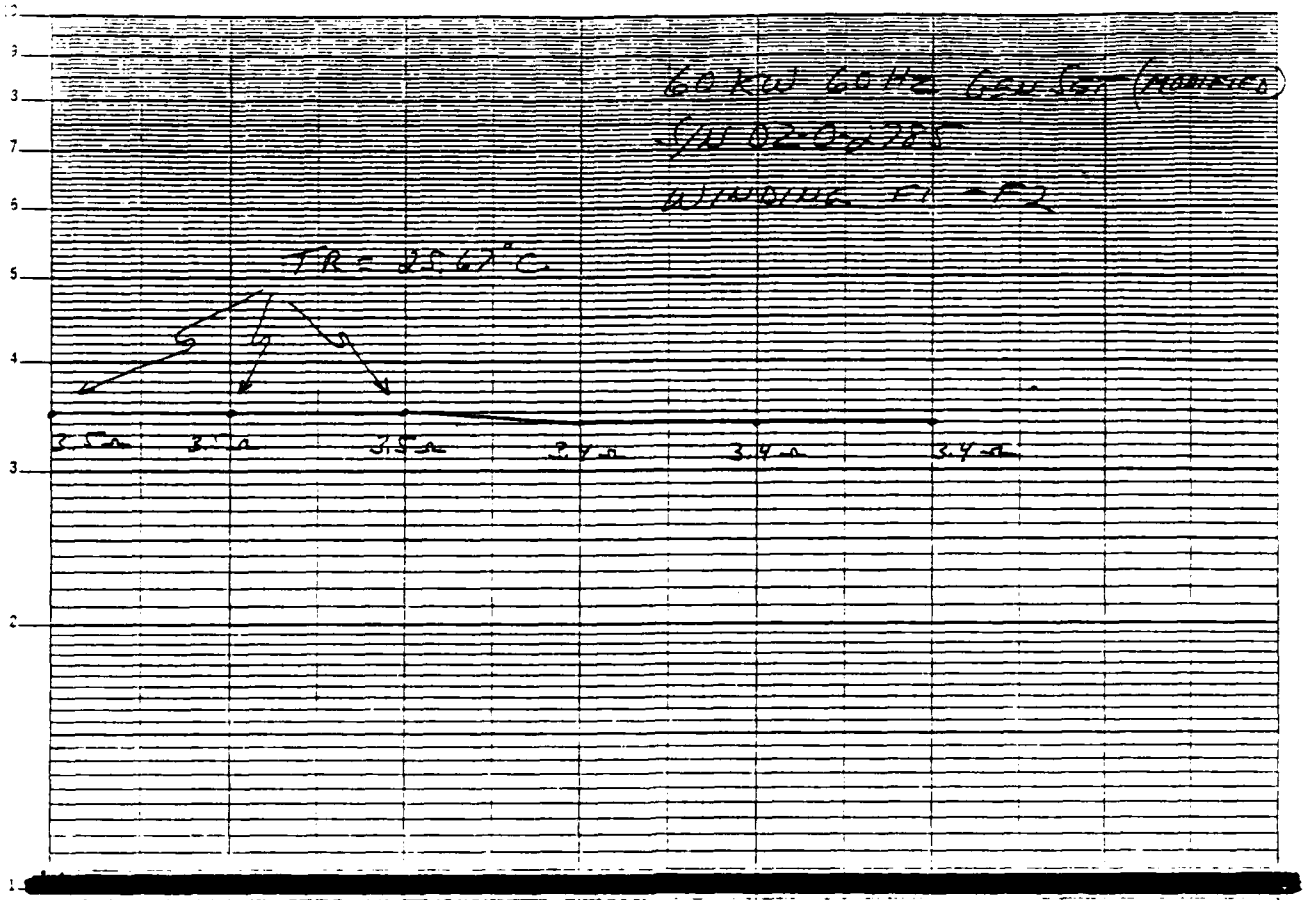
TEST READ NO UNITS	TIME HRS	DIAL READING	MULTIPLIER	LEAD RESISTANCE	WINDING RESIS. OHMS	WINDING		WINDING RESIS. CORR TO 60°F 25°C	AVG. AMBIENT TEMP.		Temp Rise °C
	1127	3.18	1	0.0000	3.18	F1	F2	3.23	69°F	(20.6°C)	25.67
		25.9	10^{-3}		.0259	T1	T4	0.0264			56.14
		26.1	10^{-3}		.0261	T2	T5	0.0266			49.85
		25.9	10^{-3}		.0259	T3	T6	0.0264			50.23
		25.8	10^{-3}		.0258	T7	T10	0.0264			48.45
		26.2	10^{-3}		.0262	T8	T11	0.0267			47.71
		26.0	10^{-3}		.0260	T9	T12	0.0265			47.10

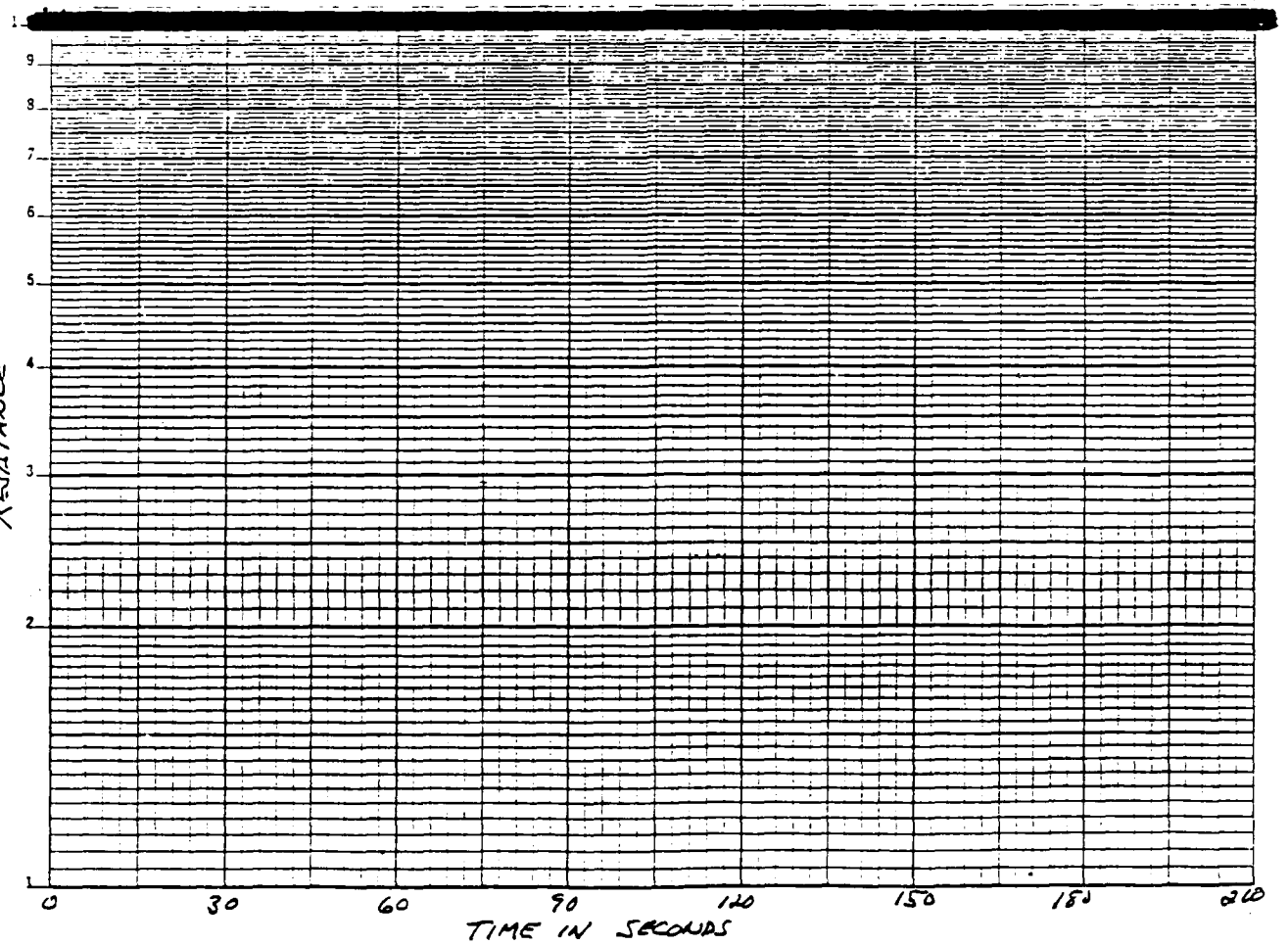
NOTES:


RESISTANCE X Ω
TIME IN SECONDS
0
30
60
90
120
150
180
200


RESISTANCE X.01
RESISTANCE X.01
TIME IN SECONDS
0
30
60
90
120
150
180
200


60 KW 60 Hz Gen Set (Assumed)
S/N 02 0 2285
Window T8 - T11
RESISTANCE X .01
TR = 47.11 °C
.0311Ω
.0311Ω
.0310Ω
.0311Ω
.0309Ω
.0309Ω
Evidence T9 - T12
RESISTANCE X .01
.0310Ω
.0306Ω
.0308Ω
.0307Ω
.0305Ω
.0326Ω
UNVERIFIED
1
2
3
4
5
6
7
8
9
0
30
60
90
120
150
180
200
TIME IN SECONDS


60 KW 60 Hz GEN SET (MODIFIED)
S/N 02-0x-228
WINDING #1 - #2
TR = 25.67° C.
3.5Ω
3.4Ω
3.5Ω
3.4Ω
3.4Ω
RESISTANCE X 1
3
3
7
6
5
4
3
2


RESISTANCE
9
8
7
6
5
4
3
2
1
0
30
60
90
120
150
180
200
TIME IN SECONDS

Winding Resistance Test; Method 401A

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BEGIN SCAN GROUP 1    07 JAN 88  14:20:13
60 KW 60HZ GEN SET S/N DZO 2785

C    1 EXHAUST 1          81.619 DEG. F
C    2 EXHAUST 2          81.024 DEG. F
C    3 EXHAUST 3          80.895 DEG. F
C    4 EXHAUST 4          80.895 DEG. F
C    5 EXHAUST 5          81.538 DEG. F
C    6 EXHAUST 6          81.435 DEG. F
C    7 ENG. COOL. IN      77.965 DEG. F
C    8 ENG. COOL. OUT     86.639 DEG. F
C    9 OIL SUMP           79.279 DEG. F
C   10 WATER TEMP/HEAD    81.269 DEG. F
C   11 OIL COOLER IN      82.369 DEG. F
C   12 OIL COOLER OUT     80.142 DEG. F
C   13  ENG. INTAKE       83.162 DEG. F
C   14 RAD. TOP LEFT      97.310 DEG. F
C   15 RAD. BTTM LEFT     92.389 DEG. F
C   16 RAD. TOP RIGHT     94.512 DEG. F
C   17 RAD. BTTM RIGHT    88.788 DEG. F
C   18 GEN. AIR IN        84.104 DEG. F
C   19 GEN. AIR OUT       84.713 DEG. F
C   20 GEN. FRAME TOP     83.226 DEG. F
C   21 GEN. FRAME BTTM    82.106 DEG. F
C   22 GEN. EXCITER       82.664 DEG. F
C   23 GEN. VOLT. REG.    83.612 DEG. F
C   24 CONTROL PANEL      83.505 DEG. F
C   25 RELAY AREA         106.69 DEG. F
C   26 BATTERY LEFT       84.018 DEG. F
C   27 BATTERY RIGHT      83.612 DEG. F
C   28 AIR IN SET         103.52 DEG. F
C   29 FUEL TANK          80.212 DEG. F
C   30 FUEL OUTLET        84.655 DEG. F

END SCAN GROUP 1      07 JAN 88  14:20:23

STOPPED SINGLE SCAN   07 JAN 88  14:20:23
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BEGIN SCAN GROUP 1    07 JAN 88  14:21:32
60 KW 60HZ GEN SET S/N DZO 2785

C    1 EXHAUST 1          81.754 DEG. F
C    2 EXHAUST 2          81.187 DEG. F
C    3 EXHAUST 3          81.035 DEG. F
C    4 EXHAUST 4          81.008 DEG. F
C    5 EXHAUST 5          81.733 DEG. F
C    6 EXHAUST 6          81.576 DEG. F
C    7 ENG. COOL. IN      78.127 DEG. F
C    8 ENG. COOL. OUT     87.257 DEG. F
C    9 OIL SUMP           79.338 DEG. F
C   10 WATER TEMP/HEAD    81.322 DEG. F
C   11 OIL COOLER IN      82.781 DEG. F
C   12 OIL COOLER OUT     80.377 DEG. F
C   13  ENG. INTAKE       83.525 DEG. F
C   14 RAD. TOP LEFT      98.268 DEG. F
C   15 RAD. BTTM LEFT     93.252 DEG. F
C   16 RAD. TOP RIGHT     95.499 DEG. F
C   17 RAD. BTTM RIGHT    89.452 DEG. F
C   18 GEN. AIR IN        84.285 DEG. F
C   19 GEN. AIR OUT       85.076 DEG. F
C   20 GEN. FRAME TOP     83.351 DEG. F
C   21 GEN. FRAME BTTM    82.151 DEG. F
C   22 GEN. EXCITER       82.992 DEG. F
C   23 GEN. VOLT. REG.    84.116 DEG. F
C   24 CONTROL PANEL      83.961 DEG. F
C   25 RELAY AREA         107.68 DEG. F
C   26 BATTERY LEFT       84.191 DEG. F
C   27 BATTERY RIGHT      83.812 DEG. F
C   28 AIR IN SET         104.29 DEG. F
C   29 FUEL TANK          80.154 DEG. F
C   30 FUEL OUTLET        85.057 DEG. F

END SCAN GROUP 1      07 JAN 88  14:21:42

STOPPED SINGLE SCAN   07 JAN 88  14:21:42
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BEGIN SCAN GROUP 1    07 JAN 88  14:45:11
60 KW 60HZ GEN SET S/N DZO 2785

C    1 EXHAUST 1          1079.0 DEG. F
C    2 EXHAUST 2          1079.6 DEG. F
C    3 EXHAUST 3          1123.5 DEG. F
C    4 EXHAUST 4          1150.5 DEG. F
C    5 EXHAUST 5          1141.8 DEG. F
C    6 EXHAUST 6          1079.2 DEG. F
C    7 ENG. COOL. IN      184.29 DEG. F
C    8 ENG. COOL. OUT     199.25 DEG. F
C    9 OIL SUMP           208.74 DEG. F
C   10 WATER TEMP/HEAD    204.70 DEG. F
C   11 OIL COOLER IN      215.66 DEG. F
C   12 OIL COOLER OUT     202.96 DEG. F
C   13  ENG. INTAKE       230.50 DEG. F
C   14 RAD. TOP LEFT      140.99 DEG. F
C   15 RAD. BTTM LEFT     133.63 DEG. F
C   16 RAD. TOP RIGHT     129.24 DEG. F
C   17 RAD. BTTM RIGHT    134.62 DEG. F
C   18 GEN. AIR IN        113.94 DEG. F
C   19 GEN. AIR OUT       119.60 DEG. F
C   20 GEN. FRAME TOP     113.74 DEG. F
C   21 GEN. FRAME BTTM    108.61 DEG. F
C   22 GEN. EXCITER       123.38 DEG. F
C   23 GEN. VOLT. REG.    109.53 DEG. F
C   24 CONTROL PANEL      107.22 DEG. F
C   25 RELAY AREA         112.23 DEG. F
C   26 BATTERY LEFT       136.65 DEG. F
C   27 BATTERY RIGHT      137.08 DEG. F
C   28 AIR IN SET         119.53 DEG. F
C   29 FUEL TANK          81.829 DEG. F
C   30 FUEL OUTLET        109.38 DEG. F

END SCAN GROUP 1      07 JAN 88  14:45:22

STOPPED SINGLE SCAN   07 JAN 88  14:45:22
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BEGIN SCAN GROUP 1    07 JAN 88  14:55:31
60 KW 60HZ GEN SET S/N DZO 2785

C    1 EXHAUST 1          1084.0 DEG. F
C    2 EXHAUST 2          1085.7 DEG. F
C    3 EXHAUST 3          1128.8 DEG. F
C    4 EXHAUST 4          1162.1 DEG. F
C    5 EXHAUST 5          1154.1 DEG. F
C    6 EXHAUST 6          1088.0 DEG. F
C    7 ENG. COOL. IN      190.64 DEG. F
C    8 ENG. COOL. OUT     206.38 DEG. F
C    9 OIL SUMP           221.59 DEG. F
C   10 WATER TEMP/HEAD    212.25 DEG. F
C   11 OIL COOLER IN      228.48 DEG. F
C   12 OIL COOLER OUT     213.32 DEG. F
C   13  ENG. INTAKE       233.52 DEG. F
C   14 RAD. TOP LEFT      146.10 DEG. F
C   15 RAD. BTTM LEFT     137.60 DEG. F
C   16 RAD. TOP RIGHT     133.44 DEG. F
C   17 RAD. BTTM RIGHT    139.07 DEG. F
C   18 GEN. AIR IN        115.18 DEG. F
C   19 GEN. AIR OUT       126.10 DEG. F
C   20 GEN. FRAME TOP     113.64 DEG. F
C   21 GEN. FRAME BTTM    113.16 DEG. F
C   22 GEN. EXCITER       127.91 DEG. F
C   23 GEN. VOLT. REG.    116.73 DEG. F
C   24 CONTROL PANEL      115.50 DEG. F
C   25 RELAY AREA         114.12 DEG. F
C   26 BATTERY LEFT       142.26 DEG. F
C   27 BATTERY RIGHT      144.71 DEG. F
C   28 AIR IN SET         121.72 DEG. F
C   29 FUEL TANK          83.773 DEG. F
C   30 FUEL OUTLET        124.71 DEG. F

END SCAN GROUP 1      07 JAN 88  14:55:41

STOPPED SINGLE SCAN   07 JAN 88  14:55:41
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BEGIN SCAN GROUP 1   07 JAN 88  15:05:18
60 KW 60HZ GEN SET S/N DZO 2785

C    1 EXHAUST 1          1083.8 DEG. F
C    2 EXHAUST 2          1087.1 DEG. F
C    3 EXHAUST 3          1131.0 DEG. F
C    4 EXHAUST 4          1157.8 DEG. F
C    5 EXHAUST 5          1147.0 DEG. F
C    6 EXHAUST 6          1093.3 DEG. F
C    7 ENG. COOL. IN      192.70 DEG. F
C    8 ENG. COOL. OUT     208.45 DEG. F
C    9 OIL SUMP           224.67 DEG. F
C   10 WATER TEMP/HEAD    214.55 DEG. F
C   11 OIL COOLER IN      231.56 DEG. F
C   12 OIL COOLER OUT     216.02 DEG. F
C   13  ENG. INTAKE       233.65 DEG. F
C   14 RAD. TOP LEFT      146.45 DEG. F
C   15 RAD. BTTM LEFT     138.08 DEG. F
C   16 RAD. TOP RIGHT     134.99 DEG. F
C   17 RAD. BTTM RIGHT    140.29 DEG. F
C   18 GEN. AIR IN        113.84 DEG. F
C   19 GEN. AIR OUT       129.36 DEG. F
C   20 GEN. FRAME TOP     121.87 DEG. F
C   21 GEN. FRAME BTTM    115.47 DEG. F
C   22 GEN. EXCITER       129.07 DEG. F
C   23 GEN. VOLT. REG.    120.20 DEG. F
C   24 CONTROL PANEL      119.51 DEG. F
C   25 RELAY AREA         114.75 DEG. F
C   26 BATTERY LEFT       144.68 DEG. F
C   27 BATTERY RIGHT      147.52 DEG. F
C   28 AIR IN SET         120.88 DEG. F
C   29 FUEL TANK          85.861 DEG. F
C   30 FUEL OUTLET        127.85 DEG. F

END SCAN GROUP 1     07 JAN 88  15:05:28

STOPPED SINGLE SCAN  07 JAN 88  15:05:28
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BEGIN SCAN GROUP 1   07 JAN 88  15:21:1
60 KW 60HZ GEN SET S/N DZO 2785

C    1 EXHAUST 1          844.49 DEG. F
C    2 EXHAUST 2          836.66 DEG. F
C    3 EXHAUST 3          866.78 DEG. F
C    4 EXHAUST 4          894.07 DEG. F
C    5 EXHAUST 5          901.33 DEG. F
C    6 EXHAUST 6          865.18 DEG. F
C    7 ENG. COOL. IN      193.02 DEG. F
C    8 ENG. COOL. OUT     211.58 DEG. F
C    9 OIL SUMP           228.92 DEG. F
C   10 WATER TEMP/HEAD    216.85 DEG. F
C   11 OIL COOLER IN      232.52 DEG. F
C   12 OIL COOLER OUT     214.44 DEG. F
C   13  ENG. INTAKE       212.39 DEG. F
C   14 RAD. TOP LEFT      148.68 DEG. F
C   15 RAD. BTTM LEFT     140.86 DEG. F
C   16 RAD. TOP RIGHT     135.70 DEG. F
C   17 RAD. BTTM RIGHT    141.22 DEG. F
C   18 GEN. AIR IN        112.42 DEG. F
C   19 GEN. AIR OUT       131.68 DEG. F
C   20 GEN. FRAME TOP     123.67 DEG. F
C   21 GEN. FRAME BTTM    117.48 DEG. F
C   22 GEN. EXCITER       129.59 DEG. F
C   23 GEN. VOLT. REG.    122.20 DEG. F
C   24 CONTROL PANEL      122.20 DEG. F
C   25 RELAY AREA         115.51 DEG. F
C   26 BATTERY LEFT       146.01 DEG. F
C   27 BATTERY RIGHT      149.28 DEG. F
C   28 AIR IN SET         117.65 DEG. F
C   29 FUEL TANK          89.460 DEG. F
C   30 FUEL OUTLET        133.04 DEG. F

END SCAN GROUP 1     07 JAN 88  15:21:2

STOPPED SINGLE SCAN  07 JAN 88  15:21:2
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BEGIN SCAN GROUP 1   07 JAN 88  15:14:08
60 KW 60HZ GEN SET S/N DZO 2785

C    1 EXHAUST 1          1084.7 DEG. F
C    2 EXHAUST 2          1083.1 DEG. F
C    3 EXHAUST 3          1130.7 DEG. F
C    4 EXHAUST 4          1160.1 DEG. F
C    5 EXHAUST 5          1148.6 DEG. F
C    6 EXHAUST 6          1100.0 DEG. F
C    7 ENG. COOL. IN      193.41 DEG. F
C    8 ENG. COOL. OUT     209.20 DEG. F
C    9 OIL SUMP           225.55 DEG. F
C   10 WATER TEMP/HEAD    215.25 DEG. F
C   11 OIL COOLER IN      232.50 DEG. F
C   12 OIL COOLER OUT     216.89 DEG. F
C   13  ENG. INTAKE       233.95 DEG. F
C   14 RAD. TOP LEFT      146.87 DEG. F
C   15 RAD. BTTM LEFT     138.49 DEG. F
C   16 RAD. TOP RIGHT     135.58 DEG. F
C   17 RAD. BTTM RIGHT    140.83 DEG. F
C   18 GEN. AIR IN        115.41 DEG. F
C   19 GEN. AIR OUT       131.61 DEG. F
C   20 GEN. FRAME TOP     122.82 DEG. F
C   21 GEN. FRAME BTTM    117.32 DEG. F
C   22 GEN. EXCITER       128.84 DEG. F
C   23 GEN. VOLT. REG.    121.39 DEG. F
C   24 CONTROL PANEL      121.10 DEG. F
C   25 RELAY AREA         115.04 DEG. F
C   26 BATTERY LEFT       145.34 DEG. F
C   27 BATTERY RIGHT      148.35 DEG. F
C   28 AIR IN SET         120.31 DEG. F
C   29 FUEL TANK          87.787 DEG. F
C   30 FUEL OUTLET        130.09 DEG. F

END SCAN GROUP 1     07 JAN 88  15:14:18

STOPPED SINGLE SCAN  07 JAN 88  15:14:19
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BEGIN SCAN GROUP 1   07 JAN 88  15:21:5
60 KW 60HZ GEN SET S/N DZO 2785

C    1 EXHAUST 1          795.27 DEG. F
C    2 EXHAUST 2          815.50 DEG. F
C    3 EXHAUST 3          854.07 DEG. F
C    4 EXHAUST 4          898.16 DEG. F
C    5 EXHAUST 5          844.74 DEG. F
C    6 EXHAUST 6          850.61 DEG. F
C    7 ENG. COOL. IN      190.56 DEG. F
C    8 ENG. COOL. OUT     227.77 DEG. F
C    9 OIL SUMP           233.02 DEG. F
C   10 WATER TEMP/HEAD    234.51 DEG. F
C   11 OIL COOLER IN      211.37 DEG. F
C   12 OIL COOLER OUT     208.12 DEG. F
C   13  ENG. INTAKE       208.19 DEG. F
C   14 RAD. TOP LEFT      172.63 DEG. F
C   15 RAD. BTTM LEFT     157.64 DEG. F
C   16 RAD. TOP RIGHT     151.41 DEG. F
C   17 RAD. BTTM RIGHT    154.88 DEG. F
C   18 GEN. AIR IN        117.30 DEG. F
C   19 GEN. AIR OUT       129.97 DEG. F
C   20 GEN. FRAME TOP     125.55 DEG. F
C   21 GEN. FRAME BTTM    119.52 DEG. F
C   22 GEN. EXCITER       129.57 DEG. F
C   23 GEN. VOLT. REG.    121.90 DEG. F
C   24 CONTROL PANEL      122.47 DEG. F
C   25 RELAY AREA         116.74 DEG. F
C   26 BATTERY LEFT       146.75 DEG. F
C   27 BATTERY RIGHT      149.92 DEG. F
C   28 AIR IN SET         116.64 DEG. F
C   29 FUEL TANK          89.866 DEG. F
C   30 FUEL OUTLET        131.92 DEG. F

END SCAN GROUP 1     07 JAN 88  15:22:0

STOPPED SINGLE SCAN  07 JAN 88  15:22:0
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BEGIN SCAN GROUP 1 07 JAN 88 15:22:24
60 KW/60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	757.42	DEG. F
C	2	EXHAUST 2	783.81	DEG. F
C	3	EXHAUST 3	824.75	DEG. F
C	4	EXHAUST 4	869.26	DEG. F
C	5	EXHAUST 5	799.62	DEG. F
C	6	EXHAUST 6	816.46	DEG. F
C	7	ENG. COOL. IN	184.77	DEG. F
C	8	ENG. COOL. OUT	233.21	DEG. F
C	9	OIL SUMP	233.41	DEG. F
C	10	WATER TEMP/HEAD	239.33	DEG. F
C	11	OIL COOLER IN	202.28	DEG. F
C	12	OIL COOLER OUT	206.72	DEG. F
C	13	ENG. INTAKE	206.81	DEG. F
C	14	RAD. TOP LEFT	181.12	DEG. F
C	15	RAD. BTTM LEFT	164.53	DEG. F
C	16	RAD. TOP RIGHT	160.28	DEG. F
C	17	RAD. BTTM RIGHT	159.97	DEG. F
C	18	GEN. AIR IN	119.33	DEG. F
C	19	GEN. AIR OUT	129.62	DEG. F
C	20	GEN. FRAME TOP	127.03	DEG. F
C	21	GEN. FRAME BTTM	120.72	DEG. F
C	22	GEN. EXCITER	130.09	DEG. F
C	23	GEN. VOLT. REG.	121.88	DEG. F
C	24	CONTROL PANEL	122.86	DEG. F
C	25	RELAY AREA	117.11	DEG. F
C	26	BATTERY LEFT	147.03	DEG. F
C	27	BATTERY RIGHT	150.13	DEG. F
C	28	AIR IN SET	116.10	DEG. F
C	29	FUEL TANK	89.989	DEG. F
C	30	FUEL OUTLET	132.06	DEG. F

END SCAN GROUP 1 07 JAN 88 15:22:34

STOPPED SINGLE SCAN 07 JAN 88 15:22:34

BEGIN SCAN GROUP 1 07 JAN 88 15:22:54
60 KW/60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	724.43	DEG. F
C	2	EXHAUST 2	752.28	DEG. F
C	3	EXHAUST 3	793.06	DEG. F
C	4	EXHAUST 4	834.56	DEG. F
C	5	EXHAUST 5	757.83	DEG. F
C	6	EXHAUST 6	779.69	DEG. F
C	7	ENG. COOL. IN	184.99	DEG. F
C	8	ENG. COOL. OUT	234.28	DEG. F
C	9	OIL SUMP	233.24	DEG. F
C	10	WATER TEMP/HEAD	240.76	DEG. F
C	11	OIL COOLER IN	202.58	DEG. F
C	12	OIL COOLER OUT	204.21	DEG. F
C	13	ENG. INTAKE	205.67	DEG. F
C	14	RAD. TOP LEFT	187.74	DEG. F
C	15	RAD. BTTM LEFT	171.63	DEG. F
C	16	RAD. TOP RIGHT	167.64	DEG. F
C	17	RAD. BTTM RIGHT	168.60	DEG. F
C	18	GEN. AIR IN	120.82	DEG. F
C	19	GEN. AIR OUT	129.25	DEG. F
C	20	GEN. FRAME TOP	128.22	DEG. F
C	21	GEN. FRAME BTTM	121.68	DEG. F
C	22	GEN. EXCITER	130.75	DEG. F
C	23	GEN. VOLT. REG.	121.97	DEG. F
C	24	CONTROL PANEL	123.27	DEG. F
C	25	RELAY AREA	117.43	DEG. F
C	26	BATTERY LEFT	147.12	DEG. F
C	27	BATTERY RIGHT	150.06	DEG. F
C	28	AIR IN SET	120.94	DEG. F
C	29	FUEL TANK	90.065	DEG. F
C	30	FUEL OUTLET	132.55	DEG. F

END SCAN GROUP 1 07 JAN 88 15:23:04

STOPPED SINGLE SCAN 07 JAN 88 15:23:04

BEGIN SCAN GROUP 1 07 JAN 88 15:23:2
60 KW/60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	694.51	DEG. F
C	2	EXHAUST 2	722.56	DEG. F
C	3	EXHAUST 3	762.70	DEG. F
C	4	EXHAUST 4	800.14	DEG. F
C	5	EXHAUST 5	720.82	DEG. F
C	6	EXHAUST 6	744.29	DEG. F
C	7	ENG. COOL. IN	186.96	DEG. F
C	8	ENG. COOL. OUT	232.64	DEG. F
C	9	OIL SUMP	233.01	DEG. F
C	10	WATER TEMP/HEAD	240.06	DEG. F
C	11	OIL COOLER IN	203.72	DEG. F
C	12	OIL COOLER OUT	202.23	DEG. F
C	13	ENG. INTAKE	204.99	DEG. F
C	14	RAD. TOP LEFT	194.66	DEG. F
C	15	RAD. BTTM LEFT	176.41	DEG. F
C	16	RAD. TOP RIGHT	173.88	DEG. F
C	17	RAD. BTTM RIGHT	174.58	DEG. F
C	18	GEN. AIR IN	121.96	DEG. F
C	19	GEN. AIR OUT	129.04	DEG. F
C	20	GEN. FRAME TOP	129.26	DEG. F
C	21	GEN. FRAME BTTM	122.43	DEG. F
C	22	GEN. EXCITER	131.57	DEG. F
C	23	GEN. VOLT. REG.	122.16	DEG. F
C	24	CONTROL PANEL	123.07	DEG. F
C	25	RELAY AREA	117.64	DEG. F
C	26	BATTERY LEFT	147.07	DEG. F
C	27	BATTERY RIGHT	149.86	DEG. F
C	28	AIR IN SET	124.99	DEG. F
C	29	FUEL TANK	90.080	DEG. F
C	30	FUEL OUTLET	133.27	DEG. F

END SCAN GROUP 1 07 JAN 88 15:23:3

STOPPED SINGLE SCAN 07 JAN 88 15:23:3

BEGIN SCAN GROUP 1 07 JAN 88 15:23:5
60 KW/60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	666.37	DEG. F
C	2	EXHAUST 2	694.01	DEG. F
C	3	EXHAUST 3	733.74	DEG. F
C	4	EXHAUST 4	766.84	DEG. F
C	5	EXHAUST 5	684.69	DEG. F
C	6	EXHAUST 6	710.55	DEG. F
C	7	ENG. COOL. IN	192.71	DEG. F
C	8	ENG. COOL. OUT	229.41	DEG. F
C	9	OIL SUMP	232.69	DEG. F
C	10	WATER TEMP/HEAD	237.05	DEG. F
C	11	OIL COOLER IN	203.56	DEG. F
C	12	OIL COOLER OUT	200.41	DEG. F
C	13	ENG. INTAKE	204.71	DEG. F
C	14	RAD. TOP LEFT	199.69	DEG. F
C	15	RAD. BTTM LEFT	180.62	DEG. F
C	16	RAD. TOP RIGHT	179.72	DEG. F
C	17	RAD. BTTM RIGHT	176.82	DEG. F
C	18	GEN. AIR IN	122.44	DEG. F
C	19	GEN. AIR OUT	129.15	DEG. F
C	20	GEN. FRAME TOP	130.12	DEG. F
C	21	GEN. FRAME BTTM	122.97	DEG. F
C	22	GEN. EXCITER	132.28	DEG. F
C	23	GEN. VOLT. REG.	122.48	DEG. F
C	24	CONTROL PANEL	124.32	DEG. F
C	25	RELAY AREA	117.67	DEG. F
C	26	BATTERY LEFT	146.88	DEG. F
C	27	BATTERY RIGHT	149.53	DEG. F
C	28	AIR IN SET	119.34	DEG. F
C	29	FUEL TANK	90.185	DEG. F
C	30	FUEL OUTLET	134.02	DEG. F

END SCAN GROUP 1 07 JAN 88 15:24:0

STOPPED SINGLE SCAN 07 JAN 88 15:24:0

BEGIN SCAN GROUP 1 07 JAN 88 15:45:08
60 KW/60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	1104.5 DEG. F
C	2	EXHAUST 2	1111.5 DEG. F
C	3	EXHAUST 3	1152.1 DEG. F
C	4	EXHAUST 4	1176.1 DEG. F
C	5	EXHAUST 5	1165.5 DEG. F
C	6	EXHAUST 6	1127.2 DEG. F
C	7	ENG. COOL. IN	192.16 DEG. F
C	8	ENG. COOL. OUT	207.45 DEG. F
C	9	OIL SUMP	218.74 DEG. F
C	10	WATER TEMP/HEAD	212.95 DEG. F
C	11	OIL COOLER IN	224.38 DEG. F
C	12	OIL COOLER OUT	211.18 DEG. F
C	13	ENG. INTAKE	240.86 DEG. F
C	14	RAD. TOP LEFT	147.97 DEG. F
C	15	RAD. BTTM LEFT	140.60 DEG. F
C	16	RAD. TOP RIGHT	137.30 DEG. F
C	17	RAD. BTTM RIGHT	142.26 DEG. F
C	18	GEN. AIR IN	117.24 DEG. F
C	19	GEN. AIR OUT	134.62 DEG. F
C	20	GEN. FRAME TOP	128.97 DEG. F
C	21	GEN. FRAME BTTM	121.77 DEG. F
C	22	GEN. EXCITER	135.11 DEG. F
C	23	GEN. VOLT. REG.	132.59 DEG. F
C	24	CONTROL PANEL	134.65 DEG. F
C	25	RELAY AREA	116.88 DEG. F
C	26	BATTERY LEFT	144.87 DEG. F
C	27	BATTERY RIGHT	146.48 DEG. F
C	28	AIR IN SET	121.67 DEG. F
C	29	FUEL TANK	92.110 DEG. F
C	30	FUEL OUTLET	146.79 DEG. F

END SCAN GROUP 1 07 JAN 88 15:45:18

STOPPED SINGLE SCAN 07 JAN 88 15:45:18

BEGIN SCAN GROUP 1 07 JAN 88 16:05:1
60 KW/60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	1094.9 DEG. F
C	2	EXHAUST 2	1099.0 DEG. F
C	3	EXHAUST 3	1133.6 DEG. F
C	4	EXHAUST 4	1163.1 DEG. F
C	5	EXHAUST 5	1153.5 DEG. F
C	6	EXHAUST 6	1104.9 DEG. F
C	7	ENG. COOL. IN	195.17 DEG. F
C	8	ENG. COOL. OUT	211.49 DEG. F
C	9	OIL SUMP	228.18 DEG. F
C	10	WATER TEMP/HEAD	217.58 DEG. F
C	11	OIL COOLER IN	234.89 DEG. F
C	12	OIL COOLER OUT	219.85 DEG. F
C	13	ENG. INTAKE	235.25 DEG. F
C	14	RAD. TOP LEFT	148.44 DEG. F
C	15	RAD. BTTM LEFT	139.51 DEG. F
C	16	RAD. TOP RIGHT	137.87 DEG. F
C	17	RAD. BTTM RIGHT	142.25 DEG. F
C	18	GEN. AIR IN	118.24 DEG. F
C	19	GEN. AIR OUT	136.86 DEG. F
C	20	GEN. FRAME TOP	125.83 DEG. F
C	21	GEN. FRAME BTTM	119.96 DEG. F
C	22	GEN. EXCITER	130.33 DEG. F
C	23	GEN. VOLT. REG.	126.64 DEG. F
C	24	CONTROL PANEL	126.71 DEG. F
C	25	RELAY AREA	117.02 DEG. F
C	26	BATTERY LEFT	148.22 DEG. F
C	27	BATTERY RIGHT	151.19 DEG. F
C	28	AIR IN SET	120.59 DEG. F
C	29	FUEL TANK	96.378 DEG. F
C	30	FUEL OUTLET	137.23 DEG. F

END SCAN GROUP 1 07 JAN 88 16:05:2

STOPPED SINGLE SCAN 07 JAN 88 16:05:2

BEGIN SCAN GROUP 1 07 JAN 88 15:55:11
60 KW/60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	1086.0 DEG. F
C	2	EXHAUST 2	1091.5 DEG. F
C	3	EXHAUST 3	1132.3 DEG. F
C	4	EXHAUST 4	1164.8 DEG. F
C	5	EXHAUST 5	1155.5 DEG. F
C	6	EXHAUST 6	1112.1 DEG. F
C	7	ENG. COOL. IN	194.83 DEG. F
C	8	ENG. COOL. OUT	210.71 DEG. F
C	9	OIL SUMP	226.85 DEG. F
C	10	WATER TEMP/HEAD	216.78 DEG. F
C	11	OIL COOLER IN	233.24 DEG. F
C	12	OIL COOLER OUT	217.72 DEG. F
C	13	ENG. INTAKE	235.59 DEG. F
C	14	RAD. TOP LEFT	148.66 DEG. F
C	15	RAD. BTTM LEFT	139.82 DEG. F
C	16	RAD. TOP RIGHT	137.41 DEG. F
C	17	RAD. BTTM RIGHT	142.24 DEG. F
C	18	GEN. AIR IN	115.50 DEG. F
C	19	GEN. AIR OUT	134.78 DEG. F
C	20	GEN. FRAME TOP	125.86 DEG. F
C	21	GEN. FRAME BTTM	119.32 DEG. F
C	22	GEN. EXCITER	131.62 DEG. F
C	23	GEN. VOLT. REG.	127.73 DEG. F
C	24	CONTROL PANEL	128.76 DEG. F
C	25	RELAY AREA	115.87 DEG. F
C	26	BATTERY LEFT	146.64 DEG. F
C	27	BATTERY RIGHT	149.53 DEG. F
C	28	AIR IN SET	121.94 DEG. F
C	29	FUEL TANK	94.257 DEG. F
C	30	FUEL OUTLET	137.18 DEG. F

END SCAN GROUP 1 07 JAN 88 15:55:21

STOPPED SINGLE SCAN 07 JAN 88 15:55:21

BEGIN SCAN GROUP 1 07 JAN 88 16:15:1
60 KW/60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	1099.0 DEG. F
C	2	EXHAUST 2	1101.7 DEG. F
C	3	EXHAUST 3	1135.2 DEG. F
C	4	EXHAUST 4	1165.8 DEG. F
C	5	EXHAUST 5	1159.3 DEG. F
C	6	EXHAUST 6	1105.0 DEG. F
C	7	ENG. COOL. IN	194.86 DEG. F
C	8	ENG. COOL. OUT	211.01 DEG. F
C	9	OIL SUMP	228.23 DEG. F
C	10	WATER TEMP/HEAD	217.12 DEG. F
C	11	OIL COOLER IN	234.72 DEG. F
C	12	OIL COOLER OUT	218.77 DEG. F
C	13	ENG. INTAKE	235.49 DEG. F
C	14	RAD. TOP LEFT	148.41 DEG. F
C	15	RAD. BTTM LEFT	139.18 DEG. F
C	16	RAD. TOP RIGHT	137.15 DEG. F
C	17	RAD. BTTM RIGHT	141.56 DEG. F
C	18	GEN. AIR IN	115.79 DEG. F
C	19	GEN. AIR OUT	136.33 DEG. F
C	20	GEN. FRAME TOP	125.46 DEG. F
C	21	GEN. FRAME BTTM	119.04 DEG. F
C	22	GEN. EXCITER	129.99 DEG. F
C	23	GEN. VOLT. REG.	126.14 DEG. F
C	24	CONTROL PANEL	126.07 DEG. F
C	25	RELAY AREA	115.34 DEG. F
C	26	BATTERY LEFT	147.21 DEG. F
C	27	BATTERY RIGHT	150.52 DEG. F
C	28	AIR IN SET	121.74 DEG. F
C	29	FUEL TANK	98.382 DEG. F
C	30	FUEL OUTLET	139.19 DEG. F

END SCAN GROUP 1 07 JAN 88 16:15:2

STOPPED SINGLE SCAN 07 JAN 88 16:15:2

BEGIN SCAN GROUP 1 07 JAN 88 16:16:54
60 KW 60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	849.62 DEG. F
C	2	EXHAUST 2	843.94 DEG. F
C	3	EXHAUST 3	870.05 DEG. F
C	4	EXHAUST 4	895.34 DEG. F
C	5	EXHAUST 5	903.92 DEG. F
C	6	EXHAUST 6	865.86 DEG. F
C	7	ENG. COOL. IN	193.98 DEG. F
C	8	ENG. COOL. OUT	212.78 DEG. F
C	9	OIL SUMP	230.79 DEG. F
C	10	WATER TEMP/HEAD	218.43 DEG. F
C	11	OIL COOLER IN	233.98 DEG. F
C	12	OIL COOLER OUT	215.49 DEG. F
C	13	ENG. INTAKE	213.64 DEG. F
C	14	RAD. TOP LEFT	150.28 DEG. F
C	15	RAD. BTTM LEFT	141.81 DEG. F
C	16	RAD. TOP RIGHT	137.00 DEG. F
C	17	RAD. BTTM RIGHT	141.74 DEG. F
C	18	GEN. AIR IN	113.97 DEG. F
C	19	GEN. AIR OUT	135.48 DEG. F
C	20	GEN. FRAME TOP	125.47 DEG. F
C	21	GEN. FRAME BTTM	118.82 DEG. F
C	22	GEN. EXCITER	130.58 DEG. F
C	23	GEN. VOLT. REG.	126.05 DEG. F
C	24	CONTROL PANEL	125.98 DEG. F
C	25	RELAY AREA	115.85 DEG. F
C	26	BATTERY LEFT	147.19 DEG. F
C	27	BATTERY RIGHT	150.48 DEG. F
C	28	AIR IN SET	113.19 DEG. F
C	29	FUEL TANK	98.871 DEG. F
C	30	FUEL OUTLET	137.55 DEG. F

END SCAN GROUP 1 07 JAN 88 16:17:04

STOPPED SINGLE SCAN 07 JAN 88 16:17:05

BEGIN SCAN GROUP 1 07 JAN 88 16:17:36
60 KW 60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	796.61 DEG. F
C	2	EXHAUST 2	818.58 DEG. F
C	3	EXHAUST 3	855.71 DEG. F
C	4	EXHAUST 4	897.62 DEG. F
C	5	EXHAUST 5	842.96 DEG. F
C	6	EXHAUST 6	848.12 DEG. F
C	7	ENG. COOL. IN	189.58 DEG. F
C	8	ENG. COOL. OUT	233.48 DEG. F
C	9	OIL SUMP	234.04 DEG. F
C	10	WATER TEMP/HEAD	237.29 DEG. F
C	11	OIL COOLER IN	217.08 DEG. F
C	12	OIL COOLER OUT	207.53 DEG. F
C	13	ENG. INTAKE	209.52 DEG. F
C	14	RAD. TOP LEFT	175.27 DEG. F
C	15	RAD. BTTM LEFT	159.41 DEG. F
C	16	RAD. TOP RIGHT	154.37 DEG. F
C	17	RAD. BTTM RIGHT	158.04 DEG. F
C	18	GEN. AIR IN	119.65 DEG. F
C	19	GEN. AIR OUT	133.09 DEG. F
C	20	GEN. FRAME TOP	128.36 DEG. F
C	21	GEN. FRAME BTTM	121.72 DEG. F
C	22	GEN. EXCITER	130.89 DEG. F
C	23	GEN. VOLT. REG.	125.86 DEG. F
C	24	CONTROL PANEL	126.24 DEG. F
C	25	RELAY AREA	116.24 DEG. F
C	26	BATTERY LEFT	147.76 DEG. F
C	27	BATTERY RIGHT	151.05 DEG. F
C	28	AIR IN SET	114.71 DEG. F
C	29	FUEL TANK	99.066 DEG. F
C	30	FUEL OUTLET	135.47 DEG. F

END SCAN GROUP 1 07 JAN 88 16:17:46

STOPPED SINGLE SCAN 07 JAN 88 16:17:46

BEGIN SCAN GROUP 1 07 JAN 88 16:18:0
60 KW 60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	758.09 DEG. F
C	2	EXHAUST 2	785.28 DEG. F
C	3	EXHAUST 3	823.76 DEG. F
C	4	EXHAUST 4	865.29 DEG. F
C	5	EXHAUST 5	796.07 DEG. F
C	6	EXHAUST 6	811.34 DEG. F
C	7	ENG. COOL. IN	185.12 DEG. F
C	8	ENG. COOL. OUT	233.91 DEG. F
C	9	OIL SUMP	234.24 DEG. F
C	10	WATER TEMP/HEAD	239.84 DEG. F
C	11	OIL COOLER IN	207.45 DEG. F
C	12	OIL COOLER OUT	205.31 DEG. F
C	13	ENG. INTAKE	208.18 DEG. F
C	14	RAD. TOP LEFT	185.44 DEG. F
C	15	RAD. BTTM LEFT	167.85 DEG. F
C	16	RAD. TOP RIGHT	163.14 DEG. F
C	17	RAD. BTTM RIGHT	166.45 DEG. F
C	18	GEN. AIR IN	121.73 DEG. F
C	19	GEN. AIR OUT	132.55 DEG. F
C	20	GEN. FRAME TOP	130.06 DEG. F
C	21	GEN. FRAME BTTM	123.14 DEG. F
C	22	GEN. EXCITER	131.52 DEG. F
C	23	GEN. VOLT. REG.	125.85 DEG. F
C	24	CONTROL PANEL	126.53 DEG. F
C	25	RELAY AREA	115.87 DEG. F
C	26	BATTERY LEFT	147.85 DEG. F
C	27	BATTERY RIGHT	151.00 DEG. F
C	28	AIR IN SET	114.14 DEG. F
C	29	FUEL TANK	99.215 DEG. F
C	30	FUEL OUTLET	135.37 DEG. F

END SCAN GROUP 1 07 JAN 88 16:18:1

STOPPED SINGLE SCAN 07 JAN 88 16:18:1

BEGIN SCAN GROUP 1 07 JAN 88 16:18:3
60 KW 60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	725.65 DEG. F
C	2	EXHAUST 2	753.63 DEG. F
C	3	EXHAUST 3	792.15 DEG. F
C	4	EXHAUST 4	838.31 DEG. F
C	5	EXHAUST 5	754.65 DEG. F
C	6	EXHAUST 6	774.65 DEG. F
C	7	ENG. COOL. IN	186.24 DEG. F
C	8	ENG. COOL. OUT	232.97 DEG. F
C	9	OIL SUMP	234.20 DEG. F
C	10	WATER TEMP/HEAD	240.18 DEG. F
C	11	OIL COOLER IN	202.79 DEG. F
C	12	OIL COOLER OUT	203.52 DEG. F
C	13	ENG. INTAKE	207.08 DEG. F
C	14	RAD. TOP LEFT	191.96 DEG. F
C	15	RAD. BTTM LEFT	173.72 DEG. F
C	16	RAD. TOP RIGHT	170.60 DEG. F
C	17	RAD. BTTM RIGHT	170.71 DEG. F
C	18	GEN. AIR IN	122.77 DEG. F
C	19	GEN. AIR OUT	132.46 DEG. F
C	20	GEN. FRAME TOP	131.20 DEG. F
C	21	GEN. FRAME BTTM	124.11 DEG. F
C	22	GEN. EXCITER	132.15 DEG. F
C	23	GEN. VOLT. REG.	126.00 DEG. F
C	24	CONTROL PANEL	126.92 DEG. F
C	25	RELAY AREA	115.54 DEG. F
C	26	BATTERY LEFT	147.67 DEG. F
C	27	BATTERY RIGHT	150.74 DEG. F
C	28	AIR IN SET	114.55 DEG. F
C	29	FUEL TANK	99.291 DEG. F
C	30	FUEL OUTLET	135.72 DEG. F

END SCAN GROUP 1 07 JAN 88 16:18:4

STOPPED SINGLE SCAN 07 JAN 88 16:18:4

BEGIN SCAN GROUP 1 07 JAN 88 16:19:08
60 KW/60HZ GEN SET S/N DZD 2785

C	1	EXHAUST 1	694.85 DEG. F
C	2	EXHAUST 2	722.50 DEG. F
C	3	EXHAUST 3	768.62 DEG. F
C	4	EXHAUST 4	794.62 DEG. F
C	5	EXHAUST 5	715.39 DEG. F
C	6	EXHAUST 6	738.25 DEG. F
C	7	ENG. COOL. IN	198.56 DEG. F
C	8	ENG. COOL. OUT	233.96 DEG. F
C	9	OIL SUMP	234.88 DEG. F
C	10	WATER TEMP/HEAD	238.51 DEG. F
C	11	OIL COOLER IN	198.78 DEG. F
C	12	OIL COOLER OUT	201.48 DEG. F
C	13	ENG. INTAKE	286.46 DEG. F
C	14	RAD. TOP LEFT	196.68 DEG. F
C	15	RAD. BTTM LEFT	178.19 DEG. F
C	16	RAD. TOP RIGHT	177.42 DEG. F
C	17	RAD. BTTM RIGHT	171.43 DEG. F
C	18	GEN. AIR IN	123.37 DEG. F
C	19	GEN. AIR OUT	132.38 DEG. F
C	20	GEN. FRAME TOP	132.82 DEG. F
C	21	GEN. FRAME BTTM	124.79 DEG. F
C	22	GEN. EXCITER	132.77 DEG. F
C	23	GEN. VOLT. REG.	126.18 DEG. F
C	24	CONTROL PANEL	127.28 DEG. F
C	25	RELAY AREA	115.65 DEG. F
C	26	BATTERY LEFT	147.34 DEG. F
C	27	BATTERY RIGHT	150.25 DEG. F
C	28	AIR IN SET	113.36 DEG. F
C	29	FUEL TANK	99.352 DEG. F
C	30	FUEL OUTLET	136.25 DEG. F

END SCAN GROUP 1 07 JAN 88 16:19:17

STOPPED SINGLE SCAN 07 JAN 88 16:19:18

BEGIN SCAN GROUP 1 07 JAN 88 16:19:37
60 KW/60HZ GEN SET S/N DZD 2785

C	1	EXHAUST 1	668.14 DEG. F
C	2	EXHAUST 2	695.82 DEG. F
C	3	EXHAUST 3	733.83 DEG. F
C	4	EXHAUST 4	762.97 DEG. F
C	5	EXHAUST 5	681.66 DEG. F
C	6	EXHAUST 6	706.13 DEG. F
C	7	ENG. COOL. IN	196.51 DEG. F
C	8	ENG. COOL. OUT	227.99 DEG. F
C	9	OIL SUMP	233.95 DEG. F
C	10	WATER TEMP/HEAD	235.86 DEG. F
C	11	OIL COOLER IN	198.67 DEG. F
C	12	OIL COOLER OUT	199.69 DEG. F
C	13	ENG. INTAKE	286.26 DEG. F
C	14	RAD. TOP LEFT	201.74 DEG. F
C	15	RAD. BTTM LEFT	183.35 DEG. F
C	16	RAD. TOP RIGHT	182.73 DEG. F
C	17	RAD. BTTM RIGHT	177.51 DEG. F
C	18	GEN. AIR IN	123.96 DEG. F
C	19	GEN. AIR OUT	132.28 DEG. F
C	20	GEN. FRAME TOP	132.64 DEG. F
C	21	GEN. FRAME BTTM	125.24 DEG. F
C	22	GEN. EXCITER	133.36 DEG. F
C	23	GEN. VOLT. REG.	126.39 DEG. F
C	24	CONTROL PANEL	127.56 DEG. F
C	25	RELAY AREA	116.17 DEG. F
C	26	BATTERY LEFT	146.95 DEG. F
C	27	BATTERY RIGHT	149.74 DEG. F
C	28	AIR IN SET	114.98 DEG. F
C	29	FUEL TANK	99.394 DEG. F
C	30	FUEL OUTLET	136.80 DEG. F

END SCAN GROUP 1 07 JAN 88 16:19:47

STOPPED SINGLE SCAN 07 JAN 88 16:19:47

BEGIN SCAN GROUP 1 07 JAN 88 16:20:0
60 KW/60HZ GEN SET S/N DZD 2785

C	1	EXHAUST 1	642.72 DEG. F
C	2	EXHAUST 2	668.83 DEG. F
C	3	EXHAUST 3	706.64 DEG. F
C	4	EXHAUST 4	732.92 DEG. F
C	5	EXHAUST 5	650.84 DEG. F
C	6	EXHAUST 6	675.67 DEG. F
C	7	ENG. COOL. IN	201.88 DEG. F
C	8	ENG. COOL. OUT	229.95 DEG. F
C	9	OIL SUMP	233.63 DEG. F
C	10	WATER TEMP/HEAD	233.87 DEG. F
C	11	OIL COOLER IN	198.98 DEG. F
C	12	OIL COOLER OUT	198.14 DEG. F
C	13	ENG. INTAKE	286.37 DEG. F
C	14	RAD. TOP LEFT	204.81 DEG. F
C	15	RAD. BTTM LEFT	186.13 DEG. F
C	16	RAD. TOP RIGHT	186.91 DEG. F
C	17	RAD. BTTM RIGHT	181.82 DEG. F
C	18	GEN. AIR IN	124.39 DEG. F
C	19	GEN. AIR OUT	132.48 DEG. F
C	20	GEN. FRAME TOP	133.31 DEG. F
C	21	GEN. FRAME BTTM	125.67 DEG. F
C	22	GEN. EXCITER	134.83 DEG. F
C	23	GEN. VOLT. REG.	126.68 DEG. F
C	24	CONTROL PANEL	127.84 DEG. F
C	25	RELAY AREA	114.99 DEG. F
C	26	BATTERY LEFT	146.39 DEG. F
C	27	BATTERY RIGHT	149.11 DEG. F
C	28	AIR IN SET	116.45 DEG. F
C	29	FUEL TANK	99.518 DEG. F
C	30	FUEL OUTLET	137.49 DEG. F

END SCAN GROUP 1 07 JAN 88 16:20:1

STOPPED SINGLE SCAN 07 JAN 88 16:20:1

BEGIN SCAN GROUP 1 07 JAN 88 16:20:3
60 KW/60HZ GEN SET S/N DZD 2785

C	1	EXHAUST 1	618.30 DEG. F
C	2	EXHAUST 2	643.69 DEG. F
C	3	EXHAUST 3	681.47 DEG. F
C	4	EXHAUST 4	705.42 DEG. F
C	5	EXHAUST 5	628.19 DEG. F
C	6	EXHAUST 6	646.63 DEG. F
C	7	ENG. COOL. IN	204.15 DEG. F
C	8	ENG. COOL. OUT	230.44 DEG. F
C	9	OIL SUMP	233.21 DEG. F
C	10	WATER TEMP/HEAD	232.59 DEG. F
C	11	OIL COOLER IN	198.71 DEG. F
C	12	OIL COOLER OUT	196.66 DEG. F
C	13	ENG. INTAKE	286.73 DEG. F
C	14	RAD. TOP LEFT	205.22 DEG. F
C	15	RAD. BTTM LEFT	185.97 DEG. F
C	16	RAD. TOP RIGHT	190.69 DEG. F
C	17	RAD. BTTM RIGHT	179.91 DEG. F
C	18	GEN. AIR IN	124.73 DEG. F
C	19	GEN. AIR OUT	132.37 DEG. F
C	20	GEN. FRAME TOP	133.88 DEG. F
C	21	GEN. FRAME BTTM	126.83 DEG. F
C	22	GEN. EXCITER	134.68 DEG. F
C	23	GEN. VOLT. REG.	126.88 DEG. F
C	24	CONTROL PANEL	128.10 DEG. F
C	25	RELAY AREA	114.39 DEG. F
C	26	BATTERY LEFT	145.76 DEG. F
C	27	BATTERY RIGHT	148.39 DEG. F
C	28	AIR IN SET	116.69 DEG. F
C	29	FUEL TANK	99.552 DEG. F
C	30	FUEL OUTLET	138.21 DEG. F

END SCAN GROUP 1 07 JAN 88 16:20:4

STOPPED SINGLE SCAN 07 JAN 88 16:20:4

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BEGIN SCAN GROUP 1   07 JAN 88  16:21:08
60 KW/60HZ GEN SET S/N DZO 2785

C    1 EXHAUST 1          596.74 DEG. F
C    2 EXHAUST 2          621.63 DEG. F
C    3 EXHAUST 3          659.41 DEG. F
C    4 EXHAUST 4          679.83 DEG. F
C    5 EXHAUST 5          594.35 DEG. F
C    6 EXHAUST 6          621.23 DEG. F
C    7 ENG. COOL. IN      204.75 DEG. F
C    8 ENG. COOL. OUT     229.84 DEG. F
C    9 OIL SUMP           232.83 DEG. F
C   10 WATER TEMP/HEAD    232.13 DEG. F
C   11 OIL COOLER IN      198.85 DEG. F
C   12 OIL COOLER OUT     195.39 DEG. F
C   13  ENG. INTAKE       207.10 DEG. F
C   14 RAD. TOP LEFT      205.66 DEG. F
C   15 RAD. BTTM LEFT     185.35 DEG. F
C   16 RAD. TOP RIGHT     193.41 DEG. F
C   17 RAD. BTTM RIGHT    179.95 DEG. F
C   18 GEN. AIR IN        124.88 DEG. F
C   19 GEN. AIR OUT       132.37 DEG. F
C   20 GEN. FRAME TOP     134.36 DEG. F
C   21 GEN. FRAME BTTM    126.39 DEG. F
C   22 GEN. EXCITER       135.28 DEG. F
C   23 GEN. VOLT. REG.    127.17 DEG. F
C   24 CONTROL PANEL      128.29 DEG. F
C   25 RELAY AREA         111.92 DEG. F
C   26 BATTERY LEFT       145.11 DEG. F
C   27 BATTERY RIGHT      147.67 DEG. F
C   28 AIR IN SET         116.88 DEG. F
C   29 FUEL TANK          99.600 DEG. F
C   30 FUEL OUTLET        138.87 DEG. F

END SCAN GROUP 1     07 JAN 88  16:21:18

STOPPED SINGLE SCAN  07 JAN 88  16:21:18


BEGIN SCAN GROUP 1   07 JAN 88  16:21:37
60 KW/60HZ GEN SET S/N DZO 2785

C    1 EXHAUST 1          576.79 DEG. F
C    2 EXHAUST 2          601.42 DEG. F
C    3 EXHAUST 3          639.17 DEG. F
C    4 EXHAUST 4          656.60 DEG. F
C    5 EXHAUST 5          578.34 DEG. F
C    6 EXHAUST 6          598.00 DEG. F
C    7 ENG. COOL. IN      205.57 DEG. F
C    8 ENG. COOL. OUT     228.88 DEG. F
C    9 OIL SUMP           232.43 DEG. F
C   10 WATER TEMP/HEAD    231.62 DEG. F
C   11 OIL COOLER IN      197.19 DEG. F
C   12 OIL COOLER OUT     194.22 DEG. F
C   13  ENG. INTAKE       207.59 DEG. F
C   14 RAD. TOP LEFT      206.83 DEG. F
C   15 RAD. BTTM LEFT     185.06 DEG. F
C   16 RAD. TOP RIGHT     195.99 DEG. F
C   17 RAD. BTTM RIGHT    180.24 DEG. F
C   18 GEN. AIR IN        125.11 DEG. F
C   19 GEN. AIR OUT       132.46 DEG. F
C   20 GEN. FRAME TOP     134.74 DEG. F
C   21 GEN. FRAME BTTM    126.58 DEG. F
C   22 GEN. EXCITER       135.35 DEG. F
C   23 GEN. VOLT. REG.    127.53 DEG. F
C   24 CONTROL PANEL      128.43 DEG. F
C   25 RELAY AREA         111.24 DEG. F
C   26 BATTERY LEFT       144.51 DEG. F
C   27 BATTERY RIGHT      147.02 DEG. F
C   28 AIR IN SET         117.49 DEG. F
C   29 FUEL TANK          99.716 DEG. F
C   30 FUEL OUTLET        139.56 DEG. F

END SCAN GROUP 1     07 JAN 88  16:21:47

STOPPED SINGLE SCAN  07 JAN 88  16:21:47
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TEST DATA

ITEM 60 KW, 60 HZ Generato Set Modified
MFGR. Kurz & Root
MODEL NO. MEP 606A
SERIAL NO. D20 2785

NTS
National Technical Systems | Scientific Services Group | Testing Division, P.O. Box 38, Hallwood, Virginia 22471, Tel: 703 752 5300

REF. NO. MIL-STD 705 Method 512.2
SHEET 1 OF 2
DATE 11 Jun 1988
JOB NO. 555-2140
PROJ. ENGR.
RECORDER/OBSERVER KM/GC

Circuit Interrupter Test (Overload)

INST TIME	STEP NO.	LOAD STEP	E60280 VOLTAGE E_1-E_0 VAC	E_2-E_0 VAC	E_3-E_0 VAC	E6040D AMPERES x 81 E_1-E_0 AC AMPS	E_2-E_0 AC AMPS	E_3-E_0 AC AMPS	E6230D KILOWATTS x 80 E_1-E_0 KW	E_2-E_0 KW	E_3-E_0 KW	E62420 POWER FACTOR PF	E62410 FREQ. Hz	E61670 EXCITER VOLTS VDC	E62480 FIELD AMPS DCA	AMB. TEMP. °F	Press mm Hg (in water)	
1458			start	ed	unit	no	load											
1510			Applied	rated	load	start	stabi	lization										
1515		R/L	120	120	120	2.54	2.55	2.55	.25	.251	.251	.80	60.3	12.7	3.25	121	15.7	15.6
1525		R/L	120	120	120	2.54	2.55	2.55	.25	.251	.251	.80	60.3	13	3.3	120	15.9	15.8
1534		R/L	119.9	120	120	2.54	2.55	2.55	.25	.251	.251	.80	60.3	13.2	3.4	120	15.8	15.8
1545		R/L	119.4	120	120	2.54	2.55	2.55	.25	.251	.251	.80	60.2	13.2	3.43	120	15.9	15.7
1557		OV/L	119.1	119.5	119.5	3.31	3.32	3.32	.26	.261	.261	.64	59.3	18.0	4.6	122	18.0	17.0
1600		unit	shut	down	9	min.	39	sec.	over	load	indic	ator	on					
*1557		Applied	130%	over	load	to	all	3	phases									
1610		Applied	rated	load	for	.15	min.	cool	down									
1611		R/L	120	120	120	2.53	2.54	2.54	.244	.25	.25	.80	60.2	13.2	3.4	121	15.6	15.6
1631		Applied	130%	over	load	to	phase	A										
1632	PHASE PF .67	O/L	116	119.5	120	3.26	2.54	2.55	.262	.25	.251	.80	59.8	14.7	3.8	121	16.4	15.9
1639		unit	shut	down	8	min.	44	sec.		indic	ator	light	on					
		Applied	rated	load	for	cool	down											
1646		R/L	120	120	120	2.54	2.55	2.55	.25	.250	.251	.80	60	13.0	3.4	120	13.6	15.0
1700		Applied	130%	over	load	to	phase	B										
1701	PF .67	O/L	120	116	119.3	2.54	3.6	2.54	.25	.266	.25	.80	66	14.7	4.8	122	16.5	16.0
1709		unit	shut	down	9	min.	26	sec.		over	load	indic	ator	on				
		Applied	rated	load	for	cool	down											
1713		R/L	119.9	120	119.4	2.54	2.55	2.55	.249	.25	.251	.80	60	13.4	3.45	120	14.0	15.2
1730		Applied	130%	over	load	to	phase	C										
1731			128	123	119.5	2.60	2.61	3.23	.26	.261	.278	.80						
1738		Removed	over	load	from	phase	c											
1742		Placed	unit	back	on	rated	load											

NOTES: * - Inst. rating.

TEST DATA

ITEM 60KW, 60 HZ Generator Set Modified

MFGR. Kurz & Root

MODEL NO. MEP 006A

SERIAL NO. D20 2785

National Technical Systems Scientific Services Group
Testing Division
PO Box 30
Harlwood, Virginia 22471
Tel: 703 752 5300

REF. NO. MIL-STD 705 Method 512.2

SHEET 2 OF 2

DATE 11 Jan. 1988

JOB NO. 555-2140

PROJ. ENGR.

RECORDER/OBSERVER KM/GC

Circuit Interrupter Test
(Overload)

INST TIME	STEP NO.	LOAD STEP	E6028D VOLTAGE E_1-E_0 VAC	E_2-E_0 VAC	E_3-E_0 VAC	E6040D AMPERES X 80 E_1-E_0 AC AMPS	E_2-E_0 AC AMPS	E_3-E_0 AC AMPS	E6230D KILOWATTS X 80 E_1-E_0 KW	E_2-E_0 KW	E_3-E_0 KW	E62420 POWER FACTOR PF	E62410 FREQ. Hz	E61670 EXCITER VOLTS VDC	E62480 FIELD AMPS DCA	AMB. TEMP. °F	Press Intake	Press Exh
1800			Applied	130%	over	load	to	phase	c									
1800	PF .67	O/L	122.1	122.9	119.3	2.61	2.64	3.26	.26	.262	.278	.79	59.3	15.8	.40	119	17.5	16.6
1804			unit	shut	down	4	min.	33	sec.	over	voltage	indic	ator	ON	"			
			Applied	rated	load	for	cool	down										
1818		R/L	126	120	120	2.55	2.56	2.56	.25	.25	.251	.80	60.1	13.2	3.4	119	13.8	15.0
1835			Applied	110%														
1835		O/L	119.5	119.5	119.5	2.75	2.75	2.76	.25	.25	.251	.74	60.2	14.8	3.8	120	16.1	15.7
1905		O/L	119.5	119.5	119.5	2.75	2.76	2.76	.25	.25	.251	.74	60.2	15.2	3.85	120	16.0	15.8
1955		O/L	119.5	119.5	119.5	2.74	2.76	2.76	.25	.25	.251	.74	60.1	15.2	3.85	120	15.8	15.6
2005		O/L	119.5	119.5	119.5	2.75	2.76	2.76	.25	.25	.251	.74	60.2	15.3	3.9	120	16.1	15.8
2035		O/L	119.5	119.5	119.5	2.75	2.76	2.76	.25	.25	.251	.74	60.2	15.4	3.9	120	16.8	15.8
2035			End	of	Test		shut	unit	down									

NOTES:

Circuit Interrupter Test; Method 612.2

BEGIN SCAN GROUP 1 11 JAN 88 15:15:04
60 KW 60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	1092.8 DEG. F
C	2	EXHAUST 2	1091.3 DEG. F
C	3	EXHAUST 3	1134.4 DEG. F
C	4	EXHAUST 4	1162.9 DEG. F
C	5	EXHAUST 5	1157.2 DEG. F
C	6	EXHAUST 6	1091.4 DEG. F
C	7	ENG. COOL. IN	191.38 DEG. F
C	8	ENG. COOL. OUT	206.70 DEG. F
C	9	OIL SUMP	226.67 DEG. F
C	10	WATER TEMP/HEAD	212.58 DEG. F
C	11	OIL COOLER IN	227.55 DEG. F
C	12	OIL COOLER OUT	213.01 DEG. F
C	13	ENG. INTAKE	234.53 DEG. F
C	14	RAD. TOP LEFT	146.38 DEG. F
C	15	RAD. BTTM LEFT	138.39 DEG. F
C	16	RAD. TOP RIGHT	134.94 DEG. F
C	17	RAD. BTTM RIGHT	140.10 DEG. F
C	18	GEN. AIR IN	116.06 DEG. F
C	19	GEN. AIR OUT	126.73 DEG. F
C	20	GEN. FRAME TOP	120.93 DEG. F
C	21	GEN. FRAME BTTM	115.74 DEG. F
C	22	GEN. EXCITER	129.85 DEG. F
C	23	GEN. VOLT. REG.	121.30 DEG. F
C	24	CONTROL PANEL	120.05 DEG. F
C	25	RELAY AREA	114.01 DEG. F
C	26	BATTERY LEFT	143.53 DEG. F
C	27	BATTERY RIGHT	145.33 DEG. F
C	28	AIR IN SET	121.96 DEG. F
C	29	FUEL TANK	89.701 DEG. F
C	30	FUEL OUTLET	126.07 DEG. F

END SCAN GROUP 1 11 JAN 88 15:15:14

STOPPED SINGLE SCAN 11 JAN 88 15:15:14

BEGIN SCAN GROUP 1 11 JAN 88 15:34:0
60 KW 60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	1090.9 DEG. F
C	2	EXHAUST 2	1093.2 DEG. F
C	3	EXHAUST 3	1135.5 DEG. F
C	4	EXHAUST 4	1165.6 DEG. F
C	5	EXHAUST 5	1158.8 DEG. F
C	6	EXHAUST 6	1098.3 DEG. F
C	7	ENG. COOL. IN	194.96 DEG. F
C	8	ENG. COOL. OUT	210.86 DEG. F
C	9	OIL SUMP	233.40 DEG. F
C	10	WATER TEMP/HEAD	216.94 DEG. F
C	11	OIL COOLER IN	234.08 DEG. F
C	12	OIL COOLER OUT	218.52 DEG. F
C	13	ENG. INTAKE	235.95 DEG. F
C	14	RAD. TOP LEFT	148.68 DEG. F
C	15	RAD. BTTM LEFT	140.09 DEG. F
C	16	RAD. TOP RIGHT	136.93 DEG. F
C	17	RAD. BTTM RIGHT	142.20 DEG. F
C	18	GEN. AIR IN	116.76 DEG. F
C	19	GEN. AIR OUT	132.55 DEG. F
C	20	GEN. FRAME TOP	124.17 DEG. F
C	21	GEN. FRAME BTTM	118.58 DEG. F
C	22	GEN. EXCITER	130.58 DEG. F
C	23	GEN. VOLT. REG.	124.44 DEG. F
C	24	CONTROL PANEL	123.93 DEG. F
C	25	RELAY AREA	116.39 DEG. F
C	26	BATTERY LEFT	146.69 DEG. F
C	27	BATTERY RIGHT	149.15 DEG. F
C	28	AIR IN SET	120.57 DEG. F
C	29	FUEL TANK	94.486 DEG. F
C	30	FUEL OUTLET	134.07 DEG. F

END SCAN GROUP 1 11 JAN 88 15:34:1

STOPPED SINGLE SCAN 11 JAN 88 15:34:1

BEGIN SCAN GROUP 1 11 JAN 88 15:25:06
60 KW 60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	1094.3 DEG. F
C	2	EXHAUST 2	1092.7 DEG. F
C	3	EXHAUST 3	1135.9 DEG. F
C	4	EXHAUST 4	1167.1 DEG. F
C	5	EXHAUST 5	1159.8 DEG. F
C	6	EXHAUST 6	1093.6 DEG. F
C	7	ENG. COOL. IN	194.37 DEG. F
C	8	ENG. COOL. OUT	210.13 DEG. F
C	9	OIL SUMP	231.97 DEG. F
C	10	WATER TEMP/HEAD	216.12 DEG. F
C	11	OIL COOLER IN	233.05 DEG. F
C	12	OIL COOLER OUT	217.63 DEG. F
C	13	ENG. INTAKE	236.39 DEG. F
C	14	RAD. TOP LEFT	148.04 DEG. F
C	15	RAD. BTTM LEFT	139.32 DEG. F
C	16	RAD. TOP RIGHT	136.38 DEG. F
C	17	RAD. BTTM RIGHT	141.65 DEG. F
C	18	GEN. AIR IN	116.40 DEG. F
C	19	GEN. AIR OUT	130.59 DEG. F
C	20	GEN. FRAME TOP	123.18 DEG. F
C	21	GEN. FRAME BTTM	117.73 DEG. F
C	22	GEN. EXCITER	130.47 DEG. F
C	23	GEN. VOLT. REG.	123.52 DEG. F
C	24	CONTROL PANEL	122.84 DEG. F
C	25	RELAY AREA	115.39 DEG. F
C	26	BATTERY LEFT	146.25 DEG. F
C	27	BATTERY RIGHT	148.61 DEG. F
C	28	AIR IN SET	120.48 DEG. F
C	29	FUEL TANK	92.123 DEG. F
C	30	FUEL OUTLET	131.32 DEG. F

END SCAN GROUP 1 11 JAN 88 15:25:17

STOPPED SINGLE SCAN 11 JAN 88 15:25:17

BEGIN SCAN GROUP 1 11 JAN 88 15:44:5
60 KW 60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	1092.8 DEG. F
C	2	EXHAUST 2	1093.0 DEG. F
C	3	EXHAUST 3	1136.9 DEG. F
C	4	EXHAUST 4	1164.8 DEG. F
C	5	EXHAUST 5	1160.1 DEG. F
C	6	EXHAUST 6	1100.6 DEG. F
C	7	ENG. COOL. IN	195.77 DEG. F
C	8	ENG. COOL. OUT	211.71 DEG. F
C	9	OIL SUMP	234.16 DEG. F
C	10	WATER TEMP/HEAD	217.78 DEG. F
C	11	OIL COOLER IN	235.07 DEG. F
C	12	OIL COOLER OUT	219.40 DEG. F
C	13	ENG. INTAKE	236.56 DEG. F
C	14	RAD. TOP LEFT	149.32 DEG. F
C	15	RAD. BTTM LEFT	140.73 DEG. F
C	16	RAD. TOP RIGHT	138.03 DEG. F
C	17	RAD. BTTM RIGHT	143.16 DEG. F
C	18	GEN. AIR IN	116.15 DEG. F
C	19	GEN. AIR OUT	134.77 DEG. F
C	20	GEN. FRAME TOP	125.39 DEG. F
C	21	GEN. FRAME BTTM	119.95 DEG. F
C	22	GEN. EXCITER	131.38 DEG. F
C	23	GEN. VOLT. REG.	125.14 DEG. F
C	24	CONTROL PANEL	124.30 DEG. F
C	25	RELAY AREA	116.65 DEG. F
C	26	BATTERY LEFT	147.69 DEG. F
C	27	BATTERY RIGHT	150.31 DEG. F
C	28	AIR IN SET	120.57 DEG. F
C	29	FUEL TANK	97.103 DEG. F
C	30	FUEL OUTLET	135.39 DEG. F

END SCAN GROUP 1 11 JAN 88 15:45:0

STOPPED SINGLE SCAN 11 JAN 88 15:45:0

BEGIN SCAN GROUP 1 11 JAN 88 15:51:34
60 KW 60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	1176.1 DEG. F
C	2	EXHAUST 2	1172.4 DEG. F
C	3	EXHAUST 3	1222.2 DEG. F
C	4	EXHAUST 4	1222.2 DEG. F
C	5	EXHAUST 5	1220.6 DEG. F
C	6	EXHAUST 6	1177.3 DEG. F
C	7	ENG. COOL. IN	197.64 DEG. F
C	8	ENG. COOL. OUT	214.30 DEG. F
C	9	OIL SUMP	234.80 DEG. F
C	10	WATER TEMP/HEAD	220.33 DEG. F
C	11	OIL COOLER IN	236.09 DEG. F
C	12	OIL COOLER OUT	220.31 DEG. F
C	13	ENG. INTAKE	248.54 DEG. F
C	14	RAD. TOP LEFT	150.58 DEG. F
C	15	RAD. BTTM LEFT	141.66 DEG. F
C	16	RAD. TOP RIGHT	139.59 DEG. F
C	17	RAD. BTTM RIGHT	144.32 DEG. F
C	18	GEN. AIR IN	117.27 DEG. F
C	19	GEN. AIR OUT	137.38 DEG. F
C	20	GEN. FRAME TOP	126.22 DEG. F
C	21	GEN. FRAME BTTM	121.23 DEG. F
C	22	GEN. EXCITER	132.28 DEG. F
C	23	GEN. VOLT. REG.	126.20 DEG. F
C	24	CONTROL PANEL	125.03 DEG. F
C	25	RELAY AREA	117.57 DEG. F
C	26	BATTERY LEFT	148.48 DEG. F
C	27	BATTERY RIGHT	151.22 DEG. F
C	28	AIR IN SET	121.69 DEG. F
C	29	FUEL TANK	98.694 DEG. F
C	30	FUEL OUTLET	140.05 DEG. F

END SCAN GROUP 1 11 JAN 88 15:51:44

STOPPED SINGLE SCAN 11 JAN 88 15:51:44

BEGIN SCAN GROUP 1 11 JAN 88 16:11:44
60 KW 50HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	1085.0 DEG. F
C	2	EXHAUST 2	1087.7 DEG. F
C	3	EXHAUST 3	1122.5 DEG. F
C	4	EXHAUST 4	1155.2 DEG. F
C	5	EXHAUST 5	1129.0 DEG. F
C	6	EXHAUST 6	1075.9 DEG. F
C	7	ENG. COOL. IN	188.40 DEG. F
C	8	ENG. COOL. OUT	202.87 DEG. F
C	9	OIL SUMP	217.40 DEG. F
C	10	WATER TEMP/HEAD	207.83 DEG. F
C	11	OIL COOLER IN	219.25 DEG. F
C	12	OIL COOLER OUT	206.77 DEG. F
C	13	ENG. INTAKE	231.48 DEG. F
C	14	RAD. TOP LEFT	144.11 DEG. F
C	15	RAD. BTTM LEFT	139.09 DEG. F
C	16	RAD. TOP RIGHT	138.88 DEG. F
C	17	RAD. BTTM RIGHT	141.47 DEG. F
C	18	GEN. AIR IN	116.73 DEG. F
C	19	GEN. AIR OUT	136.64 DEG. F
C	20	GEN. FRAME TOP	127.17 DEG. F
C	21	GEN. FRAME BTTM	125.15 DEG. F
C	22	GEN. EXCITER	130.57 DEG. F
C	23	GEN. VOLT. REG.	125.31 DEG. F
C	24	CONTROL PANEL	124.83 DEG. F
C	25	RELAY AREA	117.30 DEG. F
C	26	BATTERY LEFT	145.16 DEG. F
C	27	BATTERY RIGHT	146.93 DEG. F
C	28	AIR IN SET	121.08 DEG. F
C	29	FUEL TANK	103.40 DEG. F
C	30	FUEL OUTLET	139.98 DEG. F

END SCAN GROUP 1 11 JAN 88 16:11:55

STOPPED SINGLE SCAN 11 JAN 88 16:11:55

BEGIN SCAN GROUP 1 11 JAN 88 16:23:4
60 KW 60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	1090.1 DEG. F
C	2	EXHAUST 2	1095.9 DEG. F
C	3	EXHAUST 3	1126.5 DEG. F
C	4	EXHAUST 4	1163.5 DEG. F
C	5	EXHAUST 5	1143.1 DEG. F
C	6	EXHAUST 6	1085.2 DEG. F
C	7	ENG. COOL. IN	194.74 DEG. F
C	8	ENG. COOL. OUT	210.37 DEG. F
C	9	OIL SUMP	232.50 DEG. F
C	10	WATER TEMP/HEAD	216.25 DEG. F
C	11	OIL COOLER IN	232.96 DEG. F
C	12	OIL COOLER OUT	217.74 DEG. F
C	13	ENG. INTAKE	234.80 DEG. F
C	14	RAD. TOP LEFT	148.85 DEG. F
C	15	RAD. BTTM LEFT	140.28 DEG. F
C	16	RAD. TOP RIGHT	138.38 DEG. F
C	17	RAD. BTTM RIGHT	142.80 DEG. F
C	18	GEN. AIR IN	116.30 DEG. F
C	19	GEN. AIR OUT	137.00 DEG. F
C	20	GEN. FRAME TOP	125.81 DEG. F
C	21	GEN. FRAME BTTM	120.99 DEG. F
C	22	GEN. EXCITER	130.34 DEG. F
C	23	GEN. VOLT. REG.	125.42 DEG. F
C	24	CONTROL PANEL	124.69 DEG. F
C	25	RELAY AREA	116.74 DEG. F
C	26	BATTERY LEFT	147.13 DEG. F
C	27	BATTERY RIGHT	149.92 DEG. F
C	28	AIR IN SET	120.99 DEG. F
C	29	FUEL TANK	105.98 DEG. F
C	30	FUEL OUTLET	139.02 DEG. F

END SCAN GROUP 1 11 JAN 88 16:23:5

STOPPED SINGLE SCAN 11 JAN 88 16:23:5

BEGIN SCAN GROUP 1 11 JAN 88 16:32:2
60 KW 60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	1123.3 DEG. F
C	2	EXHAUST 2	1123.1 DEG. F
C	3	EXHAUST 3	1165.0 DEG. F
C	4	EXHAUST 4	1191.5 DEG. F
C	5	EXHAUST 5	1171.3 DEG. F
C	6	EXHAUST 6	1126.7 DEG. F
C	7	ENG. COOL. IN	197.20 DEG. F
C	8	ENG. COOL. OUT	213.36 DEG. F
C	9	OIL SUMP	234.26 DEG. F
C	10	WATER TEMP/HEAD	219.46 DEG. F
C	11	OIL COOLER IN	235.78 DEG. F
C	12	OIL COOLER OUT	220.26 DEG. F
C	13	ENG. INTAKE	240.71 DEG. F
C	14	RAD. TOP LEFT	150.43 DEG. F
C	15	RAD. BTTM LEFT	141.45 DEG. F
C	16	RAD. TOP RIGHT	139.41 DEG. F
C	17	RAD. BTTM RIGHT	143.82 DEG. F
C	18	GEN. AIR IN	117.05 DEG. F
C	19	GEN. AIR OUT	138.37 DEG. F
C	20	GEN. FRAME TOP	126.46 DEG. F
C	21	GEN. FRAME BTTM	121.50 DEG. F
C	22	GEN. EXCITER	131.23 DEG. F
C	23	GEN. VOLT. REG.	125.90 DEG. F
C	24	CONTROL PANEL	125.29 DEG. F
C	25	RELAY AREA	117.19 DEG. F
C	26	BATTERY LEFT	148.64 DEG. F
C	27	BATTERY RIGHT	151.31 DEG. F
C	28	AIR IN SET	121.89 DEG. F
C	29	FUEL TANK	107.74 DEG. F
C	30	FUEL OUTLET	139.47 DEG. F

END SCAN GROUP 1 11 JAN 88 16:32:?

STOPPED SINGLE SCAN 11 JAN 88 16:32:?

BEGIN SCAN GROUP 1 11 JAN 88 16:46:55
60 KW/60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	1015.4	DEG. F
C	2	EXHAUST 2	1021.3	DEG. F
C	3	EXHAUST 3	1044.2	DEG. F
C	4	EXHAUST 4	1074.7	DEG. F
C	5	EXHAUST 5	1045.5	DEG. F
C	6	EXHAUST 6	1001.5	DEG. F
C	7	ENG. COOL. IN	175.78	DEG. F
C	8	ENG. COOL. OUT	190.69	DEG. F
C	9	OIL SUMP	209.89	DEG. F
C	10	WATER TEMP/HEAD	194.48	DEG. F
C	11	OIL COOLER IN	211.68	DEG. F
C	12	OIL COOLER OUT	198.55	DEG. F
C	13	ENG. INTAKE	212.62	DEG. F
C	14	RAD. TOP LEFT	145.50	DEG. F
C	15	RAD. BTTM LEFT	140.87	DEG. F
C	16	RAD. TOP RIGHT	140.39	DEG. F
C	17	RAD. BTTM RIGHT	143.46	DEG. F
C	18	GEN. AIR IN	118.35	DEG. F
C	19	GEN. AIR OUT	135.42	DEG. F
C	20	GEN. FRAME TOP	125.24	DEG. F
C	21	GEN. FRAME BTTM	126.41	DEG. F
C	22	GEN. EXCITER	130.94	DEG. F
C	23	GEN. VOLT. REG.	126.19	DEG. F
C	24	CONTROL PANEL	125.97	DEG. F
C	25	RELAY AREA	116.48	DEG. F
C	26	BATTERY LEFT	144.20	DEG. F
C	27	BATTERY RIGHT	146.28	DEG. F
C	28	AIR IN SET	120.69	DEG. F
C	29	FUEL TANK	110.38	DEG. F
C	30	FUEL OUTLET	140.85	DEG. F

END SCAN GROUP 1 11 JAN 88 16:47:06

STOPPED SINGLE SCAN 11 JAN 88 16:47:06

BEGIN SCAN GROUP 1 11 JAN 88 17:13:4
60 KW/60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	969.33	DEG. F
C	2	EXHAUST 2	969.72	DEG. F
C	3	EXHAUST 3	997.71	DEG. F
C	4	EXHAUST 4	1024.8	DEG. F
C	5	EXHAUST 5	998.89	DEG. F
C	6	EXHAUST 6	955.34	DEG. F
C	7	ENG. COOL. IN	175.18	DEG. F
C	8	ENG. COOL. OUT	188.26	DEG. F
C	9	OIL SUMP	218.73	DEG. F
C	10	WATER TEMP/HEAD	192.81	DEG. F
C	11	OIL COOLER IN	219.55	DEG. F
C	12	OIL COOLER OUT	203.70	DEG. F
C	13	ENG. INTAKE	204.47	DEG. F
C	14	RAD. TOP LEFT	142.23	DEG. F
C	15	RAD. BTTM LEFT	136.60	DEG. F
C	16	RAD. TOP RIGHT	135.93	DEG. F
C	17	RAD. BTTM RIGHT	139.23	DEG. F
C	18	GEN. AIR IN	114.07	DEG. F
C	19	GEN. AIR OUT	135.16	DEG. F
C	20	GEN. FRAME TOP	125.70	DEG. F
C	21	GEN. FRAME BTTM	126.88	DEG. F
C	22	GEN. EXCITER	129.77	DEG. F
C	23	GEN. VOLT. REG.	126.19	DEG. F
C	24	CONTROL PANEL	125.82	DEG. F
C	25	RELAY AREA	117.09	DEG. F
C	26	BATTERY LEFT	146.39	DEG. F
C	27	BATTERY RIGHT	149.59	DEG. F
C	28	AIR IN SET	119.75	DEG. F
C	29	FUEL TANK	115.34	DEG. F
C	30	FUEL OUTLET	140.88	DEG. F

END SCAN GROUP 1 11 JAN 88 17:13:5

STOPPED SINGLE SCAN 11 JAN 88 17:13:5

BEGIN SCAN GROUP 1 11 JAN 88 17:01:54
60 KW/60HZ GEN SET S N DZO 2785

C	1	EXHAUST 1	1115.3	DEG. F
C	2	EXHAUST 2	1116.3	DEG. F
C	3	EXHAUST 3	1156.0	DEG. F
C	4	EXHAUST 4	1178.0	DEG. F
C	5	EXHAUST 5	1169.8	DEG. F
C	6	EXHAUST 6	1122.3	DEG. F
C	7	ENG. COOL. IN	195.60	DEG. F
C	8	ENG. COOL. OUT	211.40	DEG. F
C	9	OIL SUMP	231.93	DEG. F
C	10	WATER TEMP/HEAD	217.65	DEG. F
C	11	OIL COOLER IN	233.76	DEG. F
C	12	OIL COOLER OUT	218.46	DEG. F
C	13	ENG. INTAKE	238.89	DEG. F
C	14	RAD. TOP LEFT	149.83	DEG. F
C	15	RAD. BTTM LEFT	141.15	DEG. F
C	16	RAD. TOP RIGHT	139.42	DEG. F
C	17	RAD. BTTM RIGHT	143.62	DEG. F
C	18	GEN. AIR IN	117.04	DEG. F
C	19	GEN. AIR OUT	138.16	DEG. F
C	20	GEN. FRAME TOP	126.41	DEG. F
C	21	GEN. FRAME BTTM	121.10	DEG. F
C	22	GEN. EXCITER	131.20	DEG. F
C	23	GEN. VOLT. REG.	125.97	DEG. F
C	24	CONTROL PANEL	125.25	DEG. F
C	25	RELAY AREA	117.01	DEG. F
C	26	BATTERY LEFT	147.99	DEG. F
C	27	BATTERY RIGHT	150.78	DEG. F
C	28	AIR IN SET	122.96	DEG. F
C	29	FUEL TANK	113.09	DEG. F
C	30	FUEL OUTLET	138.88	DEG. F

END SCAN GROUP 1 11 JAN 88 17:02:04

STOPPED SINGLE SCAN 11 JAN 88 17:02:04

BEGIN SCAN GROUP 1 11 JAN 88 18:00:4
60 KW/60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	1120.0	DEG. F
C	2	EXHAUST 2	1131.8	DEG. F
C	3	EXHAUST 3	1174.5	DEG. F
C	4	EXHAUST 4	1187.2	DEG. F
C	5	EXHAUST 5	1165.8	DEG. F
C	6	EXHAUST 6	1129.8	DEG. F
C	7	ENG. COOL. IN	196.51	DEG. F
C	8	ENG. COOL. OUT	212.75	DEG. F
C	9	OIL SUMP	234.90	DEG. F
C	10	WATER TEMP/HEAD	218.37	DEG. F
C	11	OIL COOLER IN	236.33	DEG. F
C	12	OIL COOLER OUT	220.55	DEG. F
C	13	ENG. INTAKE	238.34	DEG. F
C	14	RAD. TOP LEFT	149.38	DEG. F
C	15	RAD. BTTM LEFT	140.28	DEG. F
C	16	RAD. TOP RIGHT	139.03	DEG. F
C	17	RAD. BTTM RIGHT	143.15	DEG. F
C	18	GEN. AIR IN	116.85	DEG. F
C	19	GEN. AIR OUT	139.16	DEG. F
C	20	GEN. FRAME TOP	127.00	DEG. F
C	21	GEN. FRAME BTTM	122.65	DEG. F
C	22	GEN. EXCITER	131.20	DEG. F
C	23	GEN. VOLT. REG.	126.95	DEG. F
C	24	CONTROL PANEL	126.83	DEG. F
C	25	RELAY AREA	117.98	DEG. F
C	26	BATTERY LEFT	149.88	DEG. F
C	27	BATTERY RIGHT	153.07	DEG. F
C	28	AIR IN SET	119.26	DEG. F
C	29	FUEL TANK	123.77	DEG. F
C	30	FUEL OUTLET	139.57	DEG. F

END SCAN GROUP 1 11 JAN 88 18:00:5

STOPPED SINGLE SCAN 11 JAN 88 18:00:5

BEGIN SCAN GROUP 1 11 JAN 88 18:18:18
60 KW 60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	992.86	DEG. F
C	2	EXHAUST 2	1004.5	DEG. F
C	3	EXHAUST 3	1031.5	DEG. F
C	4	EXHAUST 4	1056.3	DEG. F
C	5	EXHAUST 5	1017.5	DEG. F
C	6	EXHAUST 6	980.20	DEG. F
C	7	ENG. COOL. IN	168.61	DEG. F
C	8	ENG. COOL. OUT	188.18	DEG. F
C	9	OIL SUMP	205.99	DEG. F
C	10	WATER TEMP/HEAD	192.03	DEG. F
C	11	OIL COOLER IN	207.55	DEG. F
C	12	OIL COOLER OUT	194.93	DEG. F
C	13	ENG. INTAKE	207.21	DEG. F
C	14	RAD. TOP LEFT	143.07	DEG. F
C	15	RAD. BTTM LEFT	138.46	DEG. F
C	16	RAD. TOP RIGHT	139.35	DEG. F
C	17	RAD. BTTM RIGHT	141.44	DEG. F
C	18	GEN. AIR IN	118.25	DEG. F
C	19	GEN. AIR OUT	135.71	DEG. F
C	20	GEN. FRAME TOP	124.76	DEG. F
C	21	GEN. FRAME BTTM	128.08	DEG. F
C	22	GEN. EXCITER	128.86	DEG. F
C	23	GEN. VOLT. REG.	124.84	DEG. F
C	24	CONTROL PANEL	124.50	DEG. F
C	25	RELAY AREA	115.68	DEG. F
C	26	BATTERY LEFT	143.21	DEG. F
C	27	BATTERY RIGHT	146.39	DEG. F
C	28	AIR IN SET	119.47	DEG. F
C	29	FUEL TANK	125.55	DEG. F
C	30	FUEL OUTLET	141.38	DEG. F

END SCAN GROUP 1 11 JAN 88 18:18:28

STOPPED SINGLE SCAN 11 JAN 88 18:18:28

BEGIN SCAN GROUP 1 11 JAN 88 18:35:53
60 KW 60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	1093.8	DEG. F
C	2	EXHAUST 2	1110.5	DEG. F
C	3	EXHAUST 3	1142.6	DEG. F
C	4	EXHAUST 4	1171.1	DEG. F
C	5	EXHAUST 5	1157.0	DEG. F
C	6	EXHAUST 6	1103.3	DEG. F
C	7	ENG. COOL. IN	196.93	DEG. F
C	8	ENG. COOL. OUT	213.02	DEG. F
C	9	OIL SUMP	233.27	DEG. F
C	10	WATER TEMP/HEAD	219.04	DEG. F
C	11	OIL COOLER IN	235.30	DEG. F
C	12	OIL COOLER OUT	220.06	DEG. F
C	13	ENG. INTAKE	238.43	DEG. F
C	14	RAD. TOP LEFT	150.85	DEG. F
C	15	RAD. BTTM LEFT	141.08	DEG. F
C	16	RAD. TOP RIGHT	140.03	DEG. F
C	17	RAD. BTTM RIGHT	143.96	DEG. F
C	18	GEN. AIR IN	117.22	DEG. F
C	19	GEN. AIR OUT	139.38	DEG. F
C	20	GEN. FRAME TOP	127.45	DEG. F
C	21	GEN. FRAME BTTM	123.34	DEG. F
C	22	GEN. EXCITER	131.82	DEG. F
C	23	GEN. VOLT. REG.	126.08	DEG. F
C	24	CONTROL PANEL	125.13	DEG. F
C	25	RELAY AREA	118.81	DEG. F
C	26	BATTERY LEFT	150.66	DEG. F
C	27	BATTERY RIGHT	154.34	DEG. F
C	28	AIR IN SET	120.57	DEG. F
C	29	FUEL TANK	127.64	DEG. F
C	30	FUEL OUTLET	138.97	DEG. F

END SCAN GROUP 1 11 JAN 88 18:36:03

STOPPED SINGLE SCAN 11 JAN 88 18:36:03

BEGIN SCAN GROUP 1 11 JAN 88 19:05:0
60 KW/60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	1089.1	DEG. F
C	2	EXHAUST 2	1101.0	DEG. F
C	3	EXHAUST 3	1131.1	DEG. F
C	4	EXHAUST 4	1164.3	DEG. F
C	5	EXHAUST 5	1155.3	DEG. F
C	6	EXHAUST 6	1095.2	DEG. F
C	7	ENG. COOL. IN	195.24	DEG. F
C	8	ENG. COOL. OUT	211.31	DEG. F
C	9	OIL SUMP	232.17	DEG. F
C	10	WATER TEMP/HEAD	217.32	DEG. F
C	11	OIL COOLER IN	234.85	DEG. F
C	12	OIL COOLER OUT	219.05	DEG. F
C	13	ENG. INTAKE	235.46	DEG. F
C	14	RAD. TOP LEFT	148.66	DEG. F
C	15	RAD. BTTM LEFT	139.87	DEG. F
C	16	RAD. TOP RIGHT	139.07	DEG. F
C	17	RAD. BTTM RIGHT	142.94	DEG. F
C	18	GEN. AIR IN	117.43	DEG. F
C	19	GEN. AIR OUT	140.23	DEG. F
C	20	GEN. FRAME TOP	125.67	DEG. F
C	21	GEN. FRAME BTTM	121.68	DEG. F
C	22	GEN. EXCITER	129.47	DEG. F
C	23	GEN. VOLT. REG.	124.50	DEG. F
C	24	CONTROL PANEL	123.79	DEG. F
C	25	RELAY AREA	116.22	DEG. F
C	26	BATTERY LEFT	149.78	DEG. F
C	27	BATTERY RIGHT	154.17	DEG. F
C	28	AIR IN SET	120.19	DEG. F
C	29	FUEL TANK	128.45	DEG. F
C	30	FUEL OUTLET	137.75	DEG. F

END SCAN GROUP 1 11 JAN 88 19:05:1

STOPPED SINGLE SCAN 11 JAN 88 19:05:1

BEGIN SCAN GROUP 1 11 JAN 88 19:34:5
60 KW 60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	1097.4	DEG. F
C	2	EXHAUST 2	1108.4	DEG. F
C	3	EXHAUST 3	1133.0	DEG. F
C	4	EXHAUST 4	1164.4	DEG. F
C	5	EXHAUST 5	1156.0	DEG. F
C	6	EXHAUST 6	1096.0	DEG. F
C	7	ENG. COOL. IN	196.38	DEG. F
C	8	ENG. COOL. OUT	212.55	DEG. F
C	9	OIL SUMP	233.67	DEG. F
C	10	WATER TEMP/HEAD	218.77	DEG. F
C	11	OIL COOLER IN	236.00	DEG. F
C	12	OIL COOLER OUT	220.19	DEG. F
C	13	ENG. INTAKE	235.47	DEG. F
C	14	RAD. TOP LEFT	148.93	DEG. F
C	15	RAD. BTTM LEFT	140.12	DEG. F
C	16	RAD. TOP RIGHT	139.54	DEG. F
C	17	RAD. BTTM RIGHT	139.20	DEG. F
C	18	GEN. AIR IN	115.82	DEG. F
C	19	GEN. AIR OUT	140.70	DEG. F
C	20	GEN. FRAME TOP	126.87	DEG. F
C	21	GEN. FRAME BTTM	122.52	DEG. F
C	22	GEN. EXCITER	130.42	DEG. F
C	23	GEN. VOLT. REG.	125.57	DEG. F
C	24	CONTROL PANEL	124.77	DEG. F
C	25	RELAY AREA	116.40	DEG. F
C	26	BATTERY LEFT	151.34	DEG. F
C	27	BATTERY RIGHT	156.26	DEG. F
C	28	AIR IN SET	120.14	DEG. F
C	29	FUEL TANK	129.45	DEG. F
C	30	FUEL OUTLET	141.78	DEG. F

END SCAN GROUP 1 11 JAN 88 19:35:0

STOPPED SINGLE SCAN 11 JAN 88 19:35:0

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BEGIN SCAN GROUP 1   11 JAN 88  20:05:09
60 KW/60HZ GEN SET S/N DZO 2785

C    1 EXHAUST 1          1100.5 DEG. F
C    2 EXHAUST 2          1116.4 DEG. F
C    3 EXHAUST 3          1142.4 DEG. F
C    4 EXHAUST 4          1171.8 DEG. F
C    5 EXHAUST 5          1167.5 DEG. F
C    6 EXHAUST 6          1110.5 DEG. F
C    7 ENG. COOL. IN       197.88 DEG. F
C    8 ENG. COOL. OUT      214.09 DEG. F
C    9 OIL SUMP            235.40 DEG. F
C   10 WATER TEMP/HEAD     220.33 DEG. F
C   11 OIL COOLER IN       237.71 DEG. F
C   12 OIL COOLER OUT      221.73 DEG. F
C   13  ENG. INTAKE        237.43 DEG. F
C   14 RAD. TOP LEFT       149.29 DEG. F
C   15 RAD. BTTM LEFT      140.43 DEG. F
C   16 RAD. TOP RIGHT      140.36 DEG. F
C   17 RAD. BTTM RIGHT     143.51 DEG. F
C   18 GEN. AIR IN         116.60 DEG. F
C   19 GEN. AIR OUT        142.19 DEG. F
C   20 GEN. FRAME TOP      127.12 DEG. F
C   21 GEN. FRAME BTTM     124.46 DEG. F
C   22 GEN. EXCITER        130.62 DEG. F
C   23 GEN. VOLT. REG.     126.10 DEG. F
C   24 CONTROL PANEL       125.22 DEG. F
C   25 RELAY AREA          117.76 DEG. F
C   26 BATTERY LEFT        153.35 DEG. F
C   27 BATTERY RIGHT       158.25 DEG. F
C   28 AIR IN SET          120.49 DEG. F
C   29 FUEL TANK           124.73 DEG. F
C   30 FUEL OUTLET         139.89 DEG. F

END SCAN GROUP 1     11 JAN 88  20:05:19

STOPPED SINGLE SCAN  11 JAN 88  20:05:19


BEGIN SCAN GROUP 1   11 JAN 88  20:34:58
60 KW/60HZ GEN SET S/N DZO 2785

C    1 EXHAUST 1          1096.9 DEG. F
C    2 EXHAUST 2          1108.4 DEG. F
C    3 EXHAUST 3          1138.3 DEG. F
C    4 EXHAUST 4          1167.5 DEG. F
C    5 EXHAUST 5          1157.1 DEG. F
C    6 EXHAUST 6          1100.4 DEG. F
C    7 ENG. COOL. IN       196.91 DEG. F
C    8 ENG. COOL. OUT      213.12 DEG. F
C    9 OIL SUMP            233.92 DEG. F
C   10 WATER TEMP/HEAD     219.39 DEG. F
C   11 OIL COOLER IN       236.76 DEG. F
C   12 OIL COOLER OUT      220.83 DEG. F
C   13  ENG. INTAKE        236.19 DEG. F
C   14 RAD. TOP LEFT       149.04 DEG. F
C   15 RAD. BTTM LEFT      140.42 DEG. F
C   16 RAD. TOP RIGHT      140.19 DEG. F
C   17 RAD. BTTM RIGHT     142.73 DEG. F
C   18 GEN. AIR IN         117.48 DEG. F
C   19 GEN. AIR OUT        142.61 DEG. F
C   20 GEN. FRAME TOP      127.24 DEG. F
C   21 GEN. FRAME BTTM     124.56 DEG. F
C   22 GEN. EXCITER        130.21 DEG. F
C   23 GEN. VOLT. REG.     125.24 DEG. F
C   24 CONTROL PANEL       124.54 DEG. F
C   25 RELAY AREA          117.76 DEG. F
C   26 BATTERY LEFT        152.81 DEG. F
C   27 BATTERY RIGHT       158.40 DEG. F
C   28 AIR IN SET          120.23 DEG. F
C   29 FUEL TANK           126.90 DEG. F
C   30 FUEL OUTLET         140.22 DEG. F

END SCAN GROUP 1     11 JAN 88  20:35:08

STOPPED SINGLE SCAN  11 JAN 88  20:35:08
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TEST DATA

ITEM 60KW 60Hz GEN SET MODIFIED

MFGR. KURZ & ROOT

MODEL NO. MEP006A

SERIAL NO. 020228S

NTS

National Technical Systems | Scientific Services Group | Testing Division, P.O. Box 38, Hallwood, Virginia 22471, Tel: 703 752 5300

METHOD 515.2

OVERTEMP PROTECTIVE DEVICE TEST

REF. NO. MIL-STD 705

SHEET 1 OF 1

DATE 12 JAN 88

JOB NO. 555-2140

PROJ. ENGR.

RECORDER/OBSERVER KM/GC

INST TIME	STEP NO.	LOAD STEP	E6028D VOLTAGE L_1-L_0 VAC	E6028D VOLTAGE L_2-L_0 VAC	E6028D VOLTAGE L_3-L_0 VAC	E6040D AMPERES x80 L_1-L_0 AC AMPS	E6040D AMPERES x80 L_2-L_0 AC AMPS	E6040D AMPERES x80 L_3-L_0 AC AMPS	E6230D KILOWATTS x8 L_1-L_0 KW	E6230D KILOWATTS x8 L_2-L_0 KW	E6230D KILOWATTS x8 L_3-L_0 KW	E6342D POWER FACTOR PF	E6342D FREQ. Hz	E6167D EXCITER VOLTS VDC	E6248D FIELD AMPS DCA	AMB. TEMP. °F	Press IN H2O	Press OUT H2O
0950			START UNIT AT NO LOAD															
2951			APPLIED RATED LOAD															
2953		R/L	120	120	120	2.53	2.54	2.54	.249	.250	.250	.80	60.2	20.8	3.10	79	15.2	16.4
2956			BLOCKED COOLING AIR FOR UNIT															
1010			UNIT SHUT DOWN ON OVERTEMP-COOLANT OUT TEMP									219°F						
1012			START UNIT IN BATTLE SHORT TO COOL															
1014			REMOVED BATTLE-SHORT - SHUT UNIT DOWN -									END	OF	TEST				

1411-8

NOTES:

Overtemp Protective Device Tests; Method 515.2

BEGIN SCAN GROUP 1 12 JAN 88 09:31:32
60 KW 60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	78.215	DEG. F
C	2	EXHAUST 2	78.550	DEG. F
C	3	EXHAUST 3	79.016	DEG. F
C	4	EXHAUST 4	79.324	DEG. F
C	5	EXHAUST 5	79.454	DEG. F
C	6	EXHAUST 6	79.687	DEG. F
C	7	ENG. COOL. IN	74.471	DEG. F
C	8	ENG. COOL. OUT	76.713	DEG. F
C	9	OIL SUMP	77.047	DEG. F
C	10	WATER TEMP/HEAD	OPEN	TC
C	11	OIL COOLER IN	73.849	DEG. F
C	12	OIL COOLER OUT	73.308	DEG. F
C	13	ENG. INTAKE	78.104	DEG. F
C	14	RAD. TOP LEFT	74.704	DEG. F
C	15	RAD. BTTM LEFT	72.636	DEG. F
C	16	RAD. TOP RIGHT	74.704	DEG. F
C	17	RAD. BTTM RIGHT	OPEN	TC
C	18	GEN. AIR IN	81.082	DEG. F
C	19	GEN. AIR OUT	79.976	DEG. F
C	20	GEN. FRAME TOP	85.119	DEG. F
C	21	GEN. FRAME BTTM	77.957	DEG. F
C	22	GEN. EXCITER	76.641	DEG. F
C	23	GEN. VOLT. REG.	74.551	DEG. F
C	24	CONTROL PANEL	74.502	DEG. F
C	25	RELAY AREA	67.088	DEG. F
C	26	BATTERY LEFT	77.262	DEG. F
C	27	BATTERY RIGHT	76.463	DEG. F
C	28	AIR IN SET	67.765	DEG. F
C	29	FUEL TANK	71.892	DEG. F
C	30	FUEL OUTLET	74.337	DEG. F

END SCAN GROUP 1 12 JAN 88 09:31:42

STOPPED SINGLE SCAN 12 JAN 88 09:31:42

BEGIN SCAN GROUP 1 12 JAN 88 09:53:30
60 KW 60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	946.38	DEG. F
C	2	EXHAUST 2	958.92	DEG. F
C	3	EXHAUST 3	995.81	DEG. F
C	4	EXHAUST 4	982.92	DEG. F
C	5	EXHAUST 5	962.46	DEG. F
C	6	EXHAUST 6	938.48	DEG. F
C	7	ENG. COOL. IN	73.508	DEG. F
C	8	ENG. COOL. OUT	84.907	DEG. F
C	9	OIL SUMP	109.77	DEG. F
C	10	WATER TEMP/HEAD	OPEN	TC
C	11	OIL COOLER IN	117.41	DEG. F
C	12	OIL COOLER OUT	110.29	DEG. F
C	13	ENG. INTAKE	164.11	DEG. F
C	14	RAD. TOP LEFT	88.294	DEG. F
C	15	RAD. BTTM LEFT	85.339	DEG. F
C	16	RAD. TOP RIGHT	85.339	DEG. F
C	17	RAD. BTTM RIGHT	OPEN	TC
C	18	GEN. AIR IN	74.904	DEG. F
C	19	GEN. AIR OUT	85.671	DEG. F
C	20	GEN. FRAME TOP	80.332	DEG. F
C	21	GEN. FRAME BTTM	79.816	DEG. F
C	22	GEN. EXCITER	80.074	DEG. F
C	23	GEN. VOLT. REG.	75.289	DEG. F
C	24	CONTROL PANEL	75.084	DEG. F
C	25	RELAY AREA	69.597	DEG. F
C	26	BATTERY LEFT	80.563	DEG. F
C	27	BATTERY RIGHT	79.381	DEG. F
C	28	AIR IN SET	77.248	DEG. F
C	29	FUEL TANK	71.721	DEG. F
C	30	FUEL OUTLET	78.353	DEG. F

END SCAN GROUP 1 12 JAN 88 09:53:40

STOPPED SINGLE SCAN 12 JAN 88 09:53:40

BEGIN SCAN GROUP 1 12 JAN 88 10:10:2-
60 KW 60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	826.50	DEG. F
C	2	EXHAUST 2	828.99	DEG. F
C	3	EXHAUST 3	859.33	DEG. F
C	4	EXHAUST 4	883.40	DEG. F
C	5	EXHAUST 5	897.27	DEG. F
C	6	EXHAUST 6	847.48	DEG. F
C	7	ENG. COOL. IN	203.54	DEG. F
C	8	ENG. COOL. OUT	219.44	DEG. F
C	9	OIL SUMP	229.51	DEG. F
C	10	WATER TEMP/HEAD	OPEN	TC
C	11	OIL COOLER IN	230.52	DEG. F
C	12	OIL COOLER OUT	216.55	DEG. F
C	13	ENG. INTAKE	196.18	DEG. F
C	14	RAD. TOP LEFT	156.36	DEG. F
C	15	RAD. BTTM LEFT	151.53	DEG. F
C	16	RAD. TOP RIGHT	143.00	DEG. F
C	17	RAD. BTTM RIGHT	OPEN	TC
C	18	GEN. AIR IN	106.62	DEG. F
C	19	GEN. AIR OUT	112.87	DEG. F
C	20	GEN. FRAME TOP	102.67	DEG. F
C	21	GEN. FRAME BTTM	106.02	DEG. F
C	22	GEN. EXCITER	110.35	DEG. F
C	23	GEN. VOLT. REG.	90.855	DEG. F
C	24	CONTROL PANEL	90.963	DEG. F
C	25	RELAY AREA	96.626	DEG. F
C	26	BATTERY LEFT	153.18	DEG. F
C	27	BATTERY RIGHT	153.94	DEG. F
C	28	AIR IN SET	108.04	DEG. F
C	29	FUEL TANK	79.621	DEG. F
C	30	FUEL OUTLET	113.49	DEG. F

END SCAN GROUP 1 12 JAN 88 10:10:3?

STOPPED SINGLE SCAN 12 JAN 88 10:10:7?

TEST DATA

ITEM 60 KW / 60 HZ GENERATOR SET MODIFIED

MFGR. KURZ & KOOT

MODEL NO. MEP 006A

SERIAL NO. DZO 2785

National Technical Systems Scientific Services Group
Testing Division
P.O. Box 38
Hallwood, Virginia 22471
Tel: 703 752 5300

METHOD 640.1

MAX. POWER (125% RATED LOAD)

REF. NO. MIL-STD 705

SHEET 1 OF 1

DATE 12 JAN. 1988

JOB NO. 555-2140

PROJ. ENGR.

RECORDER/OBSERVER KM / GC

INST TIME	STEP NO.	LOAD STEP	E6028D VOLTAGE L_1-L_0 VAC	L_2-L_0 VAC	L_3-L_0 VAC	E6040D AMPERES x 80 L_1-L_0 AC AMPS	L_2-L_0 AC AMPS	L_3-L_0 AC AMPS	E6230D KILOWATTS x 80 L_1-L_0 Kw	L_2-L_0 Kw	L_3-L_0 Kw	E6420 POWER FACTOR PF	E6410 FREQ. Hz	E6170 EXCITER VOLTS VDC	E6248C FIELD AMPS DCA	AMB. TEMP. °F	Press Intake	Press Exh.
1052			START UNIT AT NO LOAD															
1105			APPLIED RATED LOAD						LOAD START STABILIZATION			LOAD TEST						
1110		HL	119.5	119.5	119.5	2.56	2.57	2.57	.251	.251	.252	.81	600	10.7	3.2	85	16.4	16.3
1120		HL	119.5	119.5	119.5	2.55	2.56	2.57	.25	.251	.252	.80	600	12.0	3.3	88	16.4	16.4
1130		HL	119.5	119.5	119.5	2.55	2.56	2.57	.25	.251	.252	.80	599	12.2	3.35	91	16.3	16.1
1140		HL	119.5	119.5	119.5	2.55	2.56	2.57	.25	.251	.252	.80	600	12.4	3.35	94	16.0	16.1
1141			COMPLETE STABILIZATION APPLIED						125% RESISTIVE LOAD TO UNIT									
1145			119.5	119.5	119.5	2.62	2.63	2.63	.315	.316	.317	1.00	60.1	9.8	2.6	96	24.0	21.2
1148			119.5	119.5	119.5	2.62	2.63	2.64	.315	.317	.317	1.00	60.1	9.7	2.6	98	24.1	21.2
1152			REDUCED UNIT TO	NO	LOAD	FOR	Cool	down										
1154			END OF	TEST	SHUT	UNIT	down											

06-103

NOTES: UNCORRECTED HP = 101.7 @ 125% RATED LOAD MAX POWER = 75.92 KW

Max. Power Test, Method 640.1

BEGIN SCAN GROUP 1 12 JAN 88 11:10:08
60 KW/60HZ GEN SET S/N DZO 2785

C				
C	1	EXHAUST 1	1023.2	DEG. F
C	2	EXHAUST 2	1031.7	DEG. F
C	3	EXHAUST 3	1073.7	DEG. F
C	4	EXHAUST 4	1095.0	DEG. F
C	5	EXHAUST 5	1087.3	DEG. F
C	6	EXHAUST 6	1025.1	DEG. F
C	7	ENG. COOL. IN	173.33	DEG. F
C	8	ENG. COOL. OUT	190.51	DEG. F
C	9	OIL SUMP	211.31	DEG. F
C	10	WATER TEMP/HEAD		OPEN TC
C	11	OIL COOLER IN	213.39	DEG. F
C	12	OIL COOLER OUT	197.87	DEG. F
C	13	ENG. INTAKE	201.51	DEG. F
C	14	RAD. TOP LEFT	124.14	DEG. F
C	15	RAD. BTTM LEFT	117.35	DEG. F
C	16	RAD. TOP RIGHT	115.92	DEG. F
C	17	RAD. BTTM RIGHT		OPEN TC
C	18	GEN. AIR IN	84.617	DEG. F
C	19	GEN. AIR OUT	102.30	DEG. F
C	20	GEN. FRAME TOP	93.846	DEG. F
C	21	GEN. FRAME BTTM	94.576	DEG. F
C	22	GEN. EXCITER	101.57	DEG. F
C	23	GEN. VOLT. REG.	94.957	DEG. F
C	24	CONTROL PANEL	95.485	DEG. F
C	25	RELAY AREA	81.104	DEG. F
C	26	BATTERY LEFT	126.43	DEG. F
C	27	BATTERY RIGHT	128.87	DEG. F
C	28	AIR IN SET	85.826	DEG. F
C	29	FUEL TANK	84.939	DEG. F
C	30	FUEL OUTLET	114.58	DEG. F

END SCAN GROUP 1 12 JAN 88 11:10:18

STOPPED SINGLE SCAN 12 JAN 88 11:10:18

BEGIN SCAN GROUP 1 12 JAN 88 11:30:0
60 KW/60HZ GEN SET S/N DZO 2785

C				
C	1	EXHAUST 1	1029.2	DEG. F
C	2	EXHAUST 2	1037.3	DEG. F
C	3	EXHAUST 3	1079.0	DEG. F
C	4	EXHAUST 4	1100.6	DEG. F
C	5	EXHAUST 5	1093.5	DEG. F
C	6	EXHAUST 6	1032.6	DEG. F
C	7	ENG. COOL. IN	176.85	DEG. F
C	8	ENG. COOL. OUT	192.83	DEG. F
C	9	OIL SUMP	215.56	DEG. F
C	10	WATER TEMP/HEAD		OPEN TC
C	11	OIL COOLER IN	217.97	DEG. F
C	12	OIL COOLER OUT	201.84	DEG. F
C	13	ENG. INTAKE	205.59	DEG. F
C	14	RAD. TOP LEFT	128.11	DEG. F
C	15	RAD. BTTM LEFT	121.32	DEG. F
C	16	RAD. TOP RIGHT	118.19	DEG. F
C	17	RAD. BTTM RIGHT		OPEN TC
C	18	GEN. AIR IN	88.417	DEG. F
C	19	GEN. AIR OUT	108.05	DEG. F
C	20	GEN. FRAME TOP	97.945	DEG. F
C	21	GEN. FRAME BTTM	98.598	DEG. F
C	22	GEN. EXCITER	104.78	DEG. F
C	23	GEN. VOLT. REG.	96.938	DEG. F
C	24	CONTROL PANEL	97.065	DEG. F
C	25	RELAY AREA	85.085	DEG. F
C	26	BATTERY LEFT	132.91	DEG. F
C	27	BATTERY RIGHT	135.33	DEG. F
C	28	AIR IN SET	91.994	DEG. F
C	29	FUEL TANK	89.786	DEG. F
C	30	FUEL OUTLET	113.51	DEG. F

END SCAN GROUP 1 12 JAN 88 11:30:1

STOPPED SINGLE SCAN 12 JAN 88 11:30:1

BEGIN SCAN GROUP 1 12 JAN 88 11:20:04
60 KW/60HZ GEN SET S/N DZO 2785

C				
C	1	EXHAUST 1	1028.9	DEG. F
C	2	EXHAUST 2	1034.1	DEG. F
C	3	EXHAUST 3	1077.1	DEG. F
C	4	EXHAUST 4	1096.0	DEG. F
C	5	EXHAUST 5	1088.6	DEG. F
C	6	EXHAUST 6	1026.0	DEG. F
C	7	ENG. COOL. IN	176.57	DEG. F
C	8	ENG. COOL. OUT	192.37	DEG. F
C	9	OIL SUMP	214.53	DEG. F
C	10	WATER TEMP/HEAD		OPEN TC
C	11	OIL COOLER IN	216.92	DEG. F
C	12	OIL COOLER OUT	200.98	DEG. F
C	13	ENG. INTAKE	203.43	DEG. F
C	14	RAD. TOP LEFT	126.07	DEG. F
C	15	RAD. BTTM LEFT	119.13	DEG. F
C	16	RAD. TOP RIGHT	117.85	DEG. F
C	17	RAD. BTTM RIGHT		OPEN TC
C	18	GEN. AIR IN	85.599	DEG. F
C	19	GEN. AIR OUT	105.21	DEG. F
C	20	GEN. FRAME TOP	95.052	DEG. F
C	21	GEN. FRAME BTTM	96.841	DEG. F
C	22	GEN. EXCITER	102.49	DEG. F
C	23	GEN. VOLT. REG.	95.459	DEG. F
C	24	CONTROL PANEL	95.807	DEG. F
C	25	RELAY AREA	82.766	DEG. F
C	26	BATTERY LEFT	131.10	DEG. F
C	27	BATTERY RIGHT	133.77	DEG. F
C	28	AIR IN SET	88.699	DEG. F
C	29	FUEL TANK	87.351	DEG. F
C	30	FUEL OUTLET	112.87	DEG. F

END SCAN GROUP 1 12 JAN 88 11:20:14

STOPPED SINGLE SCAN 12 JAN 88 11:20:14

BEGIN SCAN GROUP 1 12 JAN 88 11:40:0
60 KW/60HZ GEN SET S/N DZO 2785

C				
C	1	EXHAUST 1	1032.1	DEG. F
C	2	EXHAUST 2	1039.3	DEG. F
C	3	EXHAUST 3	1081.5	DEG. F
C	4	EXHAUST 4	1102.3	DEG. F
C	5	EXHAUST 5	1094.4	DEG. F
C	6	EXHAUST 6	1034.8	DEG. F
C	7	ENG. COOL. IN	176.96	DEG. F
C	8	ENG. COOL. OUT	192.90	DEG. F
C	9	OIL SUMP	216.19	DEG. F
C	10	WATER TEMP/HEAD		OPEN TC
C	11	OIL COOLER IN	218.28	DEG. F
C	12	OIL COOLER OUT	202.09	DEG. F
C	13	ENG. INTAKE	206.02	DEG. F
C	14	RAD. TOP LEFT	128.60	DEG. F
C	15	RAD. BTTM LEFT	122.52	DEG. F
C	16	RAD. TOP RIGHT	118.86	DEG. F
C	17	RAD. BTTM RIGHT		OPEN TC
C	18	GEN. AIR IN	87.612	DEG. F
C	19	GEN. AIR OUT	109.75	DEG. F
C	20	GEN. FRAME TOP	99.262	DEG. F
C	21	GEN. FRAME BTTM	100.15	DEG. F
C	22	GEN. EXCITER	105.89	DEG. F
C	23	GEN. VOLT. REG.	98.510	DEG. F
C	24	CONTROL PANEL	98.562	DEG. F
C	25	RELAY AREA	86.698	DEG. F
C	26	BATTERY LEFT	133.90	DEG. F
C	27	BATTERY RIGHT	135.83	DEG. F
C	28	AIR IN SET	94.278	DEG. F
C	29	FUEL TANK	92.483	DEG. F
C	30	FUEL OUTLET	113.61	DEG. F

END SCAN GROUP 1 12 JAN 88 11:40:1

STOPPED SINGLE SCAN 12 JAN 88 11:40:1

BEGIN SCAN GROUP 1 12 JAN 88 11:45:04
60 KW/60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	1209.3	DEG. F
C	2	EXHAUST 2	1218.3	DEG. F
C	3	EXHAUST 3	1266.8	DEG. F
C	4	EXHAUST 4	1292.8	DEG. F
C	5	EXHAUST 5	1255.9	DEG. F
C	6	EXHAUST 6	1246.8	DEG. F
C	7	ENG. COOL. IN	181.24	DEG. F
C	8	ENG. COOL. OUT	199.62	DEG. F
C	9	OIL SUMP	218.28	DEG. F
C	10	WATER TEMP/HEAD		OPEN TC
C	11	OIL COOLER IN	222.74	DEG. F
C	12	OIL COOLER OUT	206.18	DEG. F
C	13	ENG. INTAKE	249.84	DEG. F
C	14	RAD. TOP LEFT	125.16	DEG. F
C	15	RAD. BTTM LEFT	119.01	DEG. F
C	16	RAD. TOP RIGHT	117.07	DEG. F
C	17	RAD. BTTM RIGHT		OPEN TC
C	18	GEN. AIR IN	98.247	DEG. F
C	19	GEN. AIR OUT	116.61	DEG. F
C	20	GEN. FRAME TOP	100.28	DEG. F
C	21	GEN. FRAME BTTM	98.015	DEG. F
C	22	GEN. EXCITER	105.33	DEG. F
C	23	GEN. VOLT. REG.	99.047	DEG. F
C	24	CONTROL PANEL	99.021	DEG. F
C	25	RELAY AREA	88.436	DEG. F
C	26	BATTERY LEFT	133.85	DEG. F
C	27	BATTERY RIGHT	135.84	DEG. F
C	28	AIR IN SET	96.608	DEG. F
C	29	FUEL TANK	93.807	DEG. F
C	30	FUEL OUTLET	112.30	DEG. F

END SCAN GROUP 1 12 JAN 88 11:45:15

STOPPED SINGLE SCAN 12 JAN 88 11:45:15

BEGIN SCAN GROUP 1 12 JAN 88 11:48:57
60 KW/60HZ GEN SET S/N DZO 2785

C	1	EXHAUST 1	1239.7	DEG. F
C	2	EXHAUST 2	1251.0	DEG. F
C	3	EXHAUST 3	1288.8	DEG. F
C	4	EXHAUST 4	1311.4	DEG. F
C	5	EXHAUST 5	1275.9	DEG. F
C	6	EXHAUST 6	1263.0	DEG. F
C	7	ENG. COOL. IN	184.46	DEG. F
C	8	ENG. COOL. OUT	203.48	DEG. F
C	9	OIL SUMP	223.20	DEG. F
C	10	WATER TEMP/HEAD		OPEN TC
C	11	OIL COOLER IN	227.73	DEG. F
C	12	OIL COOLER OUT	210.24	DEG. F
C	13	ENG. INTAKE	255.79	DEG. F
C	14	RAD. TOP LEFT	128.47	DEG. F
C	15	RAD. BTTM LEFT	119.38	DEG. F
C	16	RAD. TOP RIGHT	117.63	DEG. F
C	17	RAD. BTTM RIGHT		OPEN TC
C	18	GEN. AIR IN	89.838	DEG. F
C	19	GEN. AIR OUT	110.86	DEG. F
C	20	GEN. FRAME TOP	101.11	DEG. F
C	21	GEN. FRAME BTTM	97.344	DEG. F
C	22	GEN. EXCITER	106.58	DEG. F
C	23	GEN. VOLT. REG.	99.782	DEG. F
C	24	CONTROL PANEL	99.529	DEG. F
C	25	RELAY AREA	88.594	DEG. F
C	26	BATTERY LEFT	131.68	DEG. F
C	27	BATTERY RIGHT	134.42	DEG. F
C	28	AIR IN SET	98.172	DEG. F
C	29	FUEL TANK	95.202	DEG. F
C	30	FUEL OUTLET	113.16	DEG. F

END SCAN GROUP 1 12 JAN 88 11:49:07

STOPPED SINGLE SCAN 12 JAN 88 11:49:07

Gen Set 60 KW 60 Hz

S/N DZ02787

HIGH TEMPERATURE TEST (710.1c)

Regulator Range (511.1)	
Frequency Adj. Range (511.1)	
Circuit Interrupter (Short Circuit) (512.1)	
Circuit Interrupter (Overload Trip) (512.2)	
Circuit Interrupter (512.3) (Overvoltage/UNdervoltage)	
Indicating Instrument (513.2)	
Freq. and Voltage Regulation Stab. &Trans Response (608.1)	
Freq. and Voltage Stability (Long Term) (608.2)	
Voltage Dip & Rise (619.2)	
DC Control (655.1)	
Winding Resistance (401.1a)	

MODERATE COLD (701.2c)

Voltage/Frequency Regulation, Stability & Trans Resp. (608.1)	
Panel Instrument (515.2)	
Regulator Range (511.1)	
Starting & Operating (701.2)	

EXTREME COLD (701.1c)

Voltage /Frequency Regulation, Stability & Trans Resp. (608.1)	
Panel Instrument (515.2)	
Regulator Range (511.1)	
Starting & Operating (701.2)	

AMBIENT TEMPERATURE

Torsiographing Test (504.2)	
Winding Resistance (401.1a)	
Sound Level (661.2b)	*
Drop Test (740.3b)	
Max Power (640.1)	
Overtemperature Protective Device (515.2)	

* FAILED TEST

NOTE:

SOUND LEVEL WAS THE ONLY TEST PERFORMED ON THIS UNIT

ACOUSTICAL SURVEY OF GENERATOR SET

(MAXIMUM NOISE LEVEL _____ DBA)

60KW 60Hz

TEST ITEM GEN SET S/N 0202787 HOUR METER 85 CONFIGURATION ___ UNMODIFIED ✓ MODIFIED

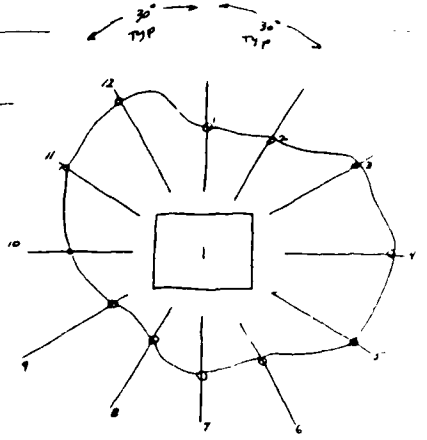
TEMPERATURE 58°F HUMIDITY 32% TEST SITE HARTWOOD SURFACE GRASS TERRAIN _____

BAROMETRIC PRESSURE 29.722 SKY COVER OVERCAST WIND DIRECTION N/A WIND VELOCITY 0

MICROPHONE GR 1962 SOUND LEVEL METER GR 1982 OCTAVE ANALYZER _____

LOAD CONDITION ✓ RATED ___ NO LOAD MICROPHONE LOCATION AS BELOW

DATE	TIME	MICROPHONE POSITION	FT/IN DISTANCE	DBA	REMARKS
3-3-88	1137	1	4' 5"	85	CENTER SECTION OF DISCHARGE BAFFLE REMOVED
		2	4' 9"	85	
		3	4' 11"	85	
		4	4' 9"	85	
		5	6' 0"	85	
		6	10' 0"	85	
		7	9' 11"	85	
		8	8' 10"	86	
		9	4' 4"	85	
		10	4' 0"	85	
		11	3' 10"	85	
3-3-88	1140	12	5' 9"	85	



FULL LOAD & NO LOAD

1.2m = 4724" elevation
measure distance and draw contours @ 12 equal 30° arc distances measure distance from set (or center of set) for sound level of 85 dBA

ACOUSTICAL TEST - OUTDOOR

(MAXIMUM NOISE LEVEL _____ DBA)

TEST ITEM 60KW 60Hz GEN SET S/N DZ02787 HOUR METER 8.6 CONFIGURATION ___ UNMODIFIED ✓ MODIFIED

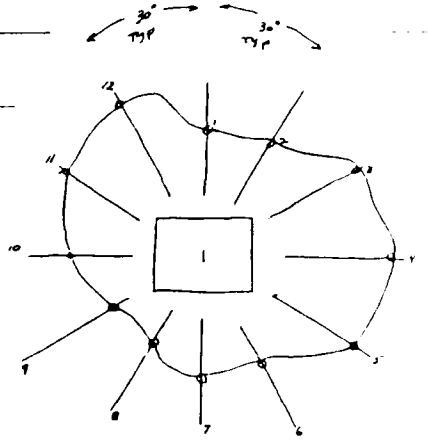
TEMPERATURE 58°F HUMIDITY 32% TEST SITE HARTWOOD SURFACE GRASS TERRAIN _____

BAROMETRIC PRESSURE 29.72" SKY COVER OVERCAST WIND DIRECTION N/A WIND VELOCITY 0

MICROPHONE GR 1962 SOUND LEVEL METER GR 1982 OCTAVE ANALYZER _____

LOAD CONDITION ___ RATED ✓ NO LOAD MICROPHONE LOCATION AS BELOW

DATE	TIME	MICROPHONE POSITION	FT/IN DISTANCE	DBA	REMARKS
3-3-88	1140	1	4'4"	85	CENTER SECTION OF DISCHARGE BAFFLE REMOVED
		2	4'1"	85	
		3	3'4"	85	
		4	2'8"	85	
		5	3'4"	85	
		6	5'8"	85	
		7	7'1"	85	
		8	5'6"	85	
		9	3'7"	85	
		10	2'8"	85	FULL LOAD & NO LOAD
		11	3'0"	85	
3-3-88	1145	12	4'0"	85	



1.2m : 47.24" elevation
MEASURE DISTANCE AND DRAW CONTOURS @ 12 EQUAL 30° ARC DISTANCES MEASURED DISTANCE FROM SET (OR CENTER OF SET) FOR SOUND LEVEL OF 85 dBA

ACOUSTICAL TEST DATA

TEST ITEM: 60 KW 60 HZ GEN SET	STATION: RATED LOAD			TIME: 1125	DATE: 3-3-88
				TEST CONDUCTED BY: NTS	TEST ITEM OPERATOR: KM BL
REG/MODEL NO: MEP 006A	SERIAL NO: D202787	ODOMETER:	HOUR METER: 8.3-8.5	TEST ITEM CONDITION: MODIFIED	
TEMPERATURE: 58 °F	HUMIDITY: 32 %	TEST SITE: HARTWOOD		SURFACE: GRASS	SEA STATE:	TERRAIN:
BAROMETRIC PRESSURE: 29.722"	SKY COVER: OVERCAST	STATIONARY OPERATION: ☒	HIGHWAY DRIVING: ☐	DRIVE BY: ☐		
WIND DIRECTION: NA	WIND VELOCITY: 0	MICROPHONE: GR1962	SOUND LEVEL METER: GR1982	OCTAVE ANALYZER		
INTERIOR: ☐	EXTERIOR: ☒	MICROPHONE LOCATION:		TAPE RECORDER:	TAPE NO:	

	dbA	dbB	dbC	ALL PASS	31.5	63	125	250	500	1,000	2,000	4000	8000	REMARKS
#1 7-M	75.5	83.7	86.8	86.4	66.4	71.6	81.4	83.6	71.3	65.5	62.8	57.0	51.4	POSITION #1 @
#2 7-M	75.8	82.9	85.6	85.7	69.3	72.6	79.6	82.2	71.9	62.8	65.2	59.2	57.4	EXHAUST END
#3 7-M	71.5	79.0	81.9	82.8	72.8	75.3	76.6	78.5	67.4	63.1	62.8	55.5	51.2	MOVING CLOCKWISE
#4 7-M	75.2	83.0	85.3	85.9	69.3	74.4	80.4	83.9	70.2	64.8	64.9	58.4	53.5	POSITION #9 @
#5 7-M	72.6	80.6	83.6	84.0	67.4	72.7	79.6	80.3	66.8	62.2	60.4	56.0	53.4	CONTROL PANEL
#6 7-M	75.2	82.9	84.5	85.5	67.0	72.1	80.4	83.3	69.1	64.7	66.6	58.2	53.0	CENTER SECTION
#7 7-M	74.4	81.3	84.7	84.2	74.0	76.0	76.7	82.4	68.1	64.0	62.1	55.5	50.4	OF DISCHARGE
#8 7-M	74.5	79.9	81.7	81.8	68.2	73.6	72.7	79.0	71.2	68.4	62.1	58.9	56.4	BAFFLE REMOVED
#9 0.7-M	84.5	91.5	93.2	93.8	76.7	81.4	82.2	90.3	79.3	76.5	72.7	69.3	65.6	

5.11-8

ACOUSTICAL TEST DATA

TEST ITEM: 60KW 60Hz GENSET	STATION: NO LOAD			TIME: 1113 - 1124	DATE: 3-3-88
				TEST CONDUCTED BY: NTS	TEST ITEM OPERATOR: KM RJ
AFG/MODEL NO: MEP0064	SERIAL NO: D202787	ODOMETER:	HOUR METER: 81-83	TEST ITEM CONDITION: MODIFIED	
TEMPERATURE: 58°F	HUMIDITY: 32%	TEST SITE: HARTWOOD		SURFACE: GRASS	SEA STATE:	TERRAIN:
BAROMETRIC PRESSURE: 29.722"	SKY COVER: OVERCAST	STATIONARY OPERATION: [X]	HIGHWAY DRIVING: [ ]	DRIVE BY: [ ]		
WIND DIRECTION: N/A	WIND VELOCITY: 0	MICROPHONE: GR1962	SOUND LEVEL METER: GR1982	OCTAVE ANALYZER:		
INTERIOR: [ ]	EXTERIOR: [X]	MICROPHONE LOCATION:		TAPE RECORDER:	TAPE NO:	

	dbA	dbB	dbC	ALL PASS	36.5	63	125	250	500	1,000	2,000	4000	8000	REMARKS
#1 7m	72.2	78.8	81.1	81.0	64.8	69.5	76.2	78.3	68.4	61.5	60.6	57.8	55.9	POSITION 1 @
#2 7m	71.5	77.5	79.8	80.4	66.3	69.7	75.5	76.0	67.2	64.6	62.9	59.0	57.5	EXHAUST END
#3 7m	71.8	79.5	82.5	82.9	66.3	71.5	78.4	79.3	65.2	61.2	59.4	55.0	53.0	POSITION 9
#4 7m	72.7	79.7	81.9	82.0	65.7	71.1	75.8	80.5	66.4	61.6	60.1	56.6	55.4	CONTROL PANEL
#5 7m	74.5	82.3	84.5	85.2	65.5	71.1	78.6	83.5	67.4	59.7	57.3	51.8	52.3	
#6 7m	71.4	78.8	81.1	81.1	64.3	70.7	76.9	77.7	67.3	61.6	61.2	56.3	53.7	CENTER SECTION OF
#7 7m	69.0	75.4	79.2	80.1	62.5	71.7	75.7	76.3	64.3	60.1	60.9	53.6	50.7	DISCHARGE BAFFLE
#8 7m	70.7	77.8	79.8	79.9	62.0	70.2	75.5	76.2	66.5	62.0	63.2	57.5	55.7	REMOVED
#9 0.7m	85.8	93.9	95.4	95.6	58.8	78.3	88.7	93.9	79.4	72.7	67.3	65.2	64.8	

3-11-27

Gen Set 60 KW 400 Hz

S/N FZ06050

HIGH TEMPERATURE TEST (710.1c)

Regulator Range (511.1)	
Frequency Adj. Range (511.1)	
Circuit Interrupter (Short Circuit) (512.1)	
Circuit Interrupter (Overload Trip) (512.2)	
Circuit Interrupter (512.3) (Overvoltage/UNdervoltage)	
Indicating Instrument (515.2)	
Freq. and Voltage Regulation Stab. & Trans Response (608.1)	
Freq. and Voltage Stability (Long Term) (608.2)	
Voltage Dip & Rise (619.2)	
DC Control (655.1)	
Winding Resistance (401.1a)	

MODERATE COLD (701.2c)

Voltage/Frequency Regulation, Stability & Trans Resp. (608.1)	
Panel Instrument (515.2)	
Regulator Range (511.1)	
Starting & Operating (701.2)	

EXTREME COLD (701.1c)

Voltage/Frequency Regulation, Stability & Trans Resp. (608.1)	
Panel Instrument (515.2)	
Regulator Range (511.1)	
Starting & Operating (701.2)	

AMBIENT TEMPERATURE

Torsiographing Test (504.2)	
Winding Resistance (401.1a)	
Sound Level (661.2b)	*
Drop Test (740.3b)	
Max Power (640.1)	
Overtemperature Protective Device (515.2)	

* FAILED TEST

NOTE:

SOUND LEVEL WAS THE ONLY TEST PERFORMED ON THIS UNIT

ACOUSTICAL TEST DATA FOR COMMERCIAL

(MAXIMUM NOISE LEVEL _____ DBA)

TEST ITEM 60Kw/400Hz GEN SET S/N FZO 6050 HOUR METER #517.4 CONFIGURATION ___ UNMODIFIED ✓ MODIFIED

TEMPERATURE 51°F HUMIDITY 50% TEST SITE HARTWELL SURFACE GRASS TERRAIN —

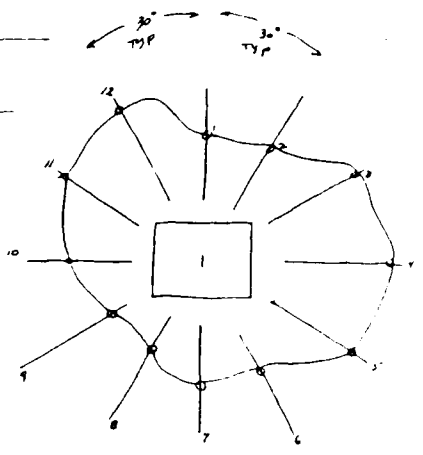
BAROMETRIC PRESSURE 29.696 SKY COVER OVERCAST WIND DIRECTION NA WIND VELOCITY 0

MICROPHONE GR 1962 SOUND LEVEL METER GR 1982 OCTAVE ANALYZER _____

LOAD CONDITION ___ RATED ✓ NO LOAD MICROPHONE LOCATION AS BELOW

DATE	TIME	MICROPHONE POSITION	DISTANCE	DBA	REMARKS
3-3-88	1003	1	5-2	85	CENTER SECTION OF DISCHARGE BAFFLE REMOVED.
		2	5-4	85	
		3	4-4	85	
		4	4-6	85	
		5	3-11	85	
		6	6-9	85	
		7	8-4	85	
		8	8-8	85	
		9	8-0	85	
		10	4-4	85	
		11	3-4	85	
3-3-88	1005	12	6-7	85	

8-112



FULL LOAD & NO LOAD

1.2m = 47.24" ABOVE GROUND
MEASURE DISTANCE AND DRAW SCRIBERS @ 12 EQUAL 30° ARC DISTANCES MEASURED DISTANCE FROM SET (OR CENTER OF SET) FOR SOUND LEVEL OF 85 dBA

ACOUSTICAL TEST DATA

E: 0927 | DATE: 3-3-87

TEST ITEM	STATION	TEST CONDUCTED BY	TEST ITEM OPERATOR
60 KW / 400 HZ GEN SET		NTS	KM BJ

RFG/MODEL NO.	SERIAL NO.	ODOMETER	HOUR METER	TEST ITEM CONDITION
MEP 115A	F-206050		516.5	MODIFIED NO LOAD

TEMPERATURE	HUMIDITY	TEST SITE	SURFACE	SEA STATE	TERRAIN
51 °F	50%	HARTWOOD	GRASS	—	—

BAROMETRIC PRESSURE	SKY COVER	STATIONARY OPERATION	HIGHWAY DRIVING	DRIVE BY
29.696	OVERCAST	☒	☐	☐

WIND DIRECTION	WIND VELOCITY	MICROPHONE	SOUND LEVEL METER	OCTAVE ANALYZER
NA	0	GR 1962	GR 1982	

INTERIOR	EXTERIOR	MICROPHONE LOCATION	TAPE RECORDER	TAPE NO.
☐	☒			

POSITION	DISTANCE	dbA	dbB	dbC	ALL PASS	36.5	63	125	250	500	1,000	2,000	4000	8000	REMARKS
#1	7M	76.7	84.3	84.0	86.0	86.5	68.0	71.7	75.7	80.0	73.3	64.7	60.6	57.5	POSITION #1 @
#2	7M	74.7	80.6	82.5	82.9	68.7	72.5	75.4	79.5	71.1	66.2	64.2	59.8	57.1	EXHAUST END
#3	7M	71.3	78.2	82.0	82.8	74.1	77.5	76.4	78.4	68.3	62.6	61.2	55.9	52.7	MOVING CLOCKWISE
#4	7M	74.8	81.4	84.2	84.5	74.4	75.0	77.3	81.5	71.1	64.6	62.0	57.7	52.9	POSITION #9 @
#5	7M	76.0	83.3	85.6	85.5	71.3	72.4	78.0	83.8	72.1	61.6	56.4	53.2	52.8	CONTROL PANEL
#6	7M	75.7	82.6	84.6	84.3	68.4	73.4	77.2	82.9	71.8	64.2	60.7	56.6	53.1	CENTER SECTION
#7	7M	72.7	78.9	81.7	82.0	69.2	76.0	75.5	78.1	68.7	63.8	60.1	56.4	53.0	OF DISCHARGE
#8	7M	75.4	82.0	84.3	84.7	69.2	71.2	77.2	81.8	71.0	66.3	63.0	58.3	56.1	BAFFLE REMOVED
#9	0.7M	89.1	96.5	98.1	98.3	85.2	84.4	87.6	91.5	84.3	74.5	67.9	66.9	64.8	

ACOUSTICAL TEST DATA

TIME: 0945	DATE: 3-3-95				
TEST ITEM: 60 KW/400HZ GEN SET	STATION:	TEST CONDUCTED BY: NTS	TEST ITEM OPERATOR: KM BJ		
RFG/MODEL NO: MEP 115A	SERIAL NO: FZ0 6050	ODOMETER:	HOUR METER: 517.4	TEST ITEM CONDITION: MODIFIED	RATED LOAD
TEMPERATURE: 51°F	HUMIDITY: 50%	TEST SITE: HARTWOOD	SURFACE: GRASS	SEA STATE: —	TERRAIN: —
BAROMETRIC PRESSURE: 29.696	SKY COVER: OVERCAST	STATIONARY OPERATION: ☒	HIGHWAY DRIVING: ☐	DRIVE BY: ☐	
WIND DIRECTION: NA	WIND VELOCITY: 0	MICROPHONE: GR1962	SOUND LEVEL METER: GR1982	OCTAVE ANALYZER:	
INTERIOR: ☐	EXTERIOR: ☒	MICROPHONE LOCATION:	TAPE RECORDER:	TAPE NO	

POSITION	DISTANCE	dbA	dbB	dbC	ALL PASS	~~36~~ 31.5	63	125	250	500	1,000	2,000	4000	8000	REMARKS
#1	7M	77.2	83.7	86.7	88.0	75.4	76.0	79.9	84.5	75.2	65.5	61.5	59.7	52.3	POSITION #1 @
#2	7M	76.6	84.8	86.6	87.1	73.8	77.5	78.5	84.6	74.7	69.8	66.4	61.8	61.3	EXHAUST END
#3	7M	73.2	80.8	85.8	86.7	77.4	83.5	81.0	79.4	69.8	63.2	63.3	57.5	54.2	MOVING CLOCKWISE
#4	7M	73.3	80.5	83.7	83.9	73.7	79.5	79.4	78.6	70.2	65.0	63.4	60.6	55.7	POSITION #9
#5	7M	74.1	81.2	84.8	84.9	68.3	74.7	80.6	81.5	70.2	62.0	60.3	56.8	56.4	@ CONTROL PANEL.
#6	7M	76.4	83.7	86.2	86.7	71.3	77.4	80.6	84.6	70.8	65.2	63.7	59.9	55.7	CENTER SECTION
#7	7M	74.3	81.6	85.0	85.9	74.0	79.2	81.3	80.7	69.8	64.2	62.5	58.0	53.9	REMOVED IN DISCHARGE
#8	7M	77.0	83.6	86.2	86.3	73.6	78.8	81.7	82.9	74.1	68.7	65.6	60.1	58.9	BAFFLE
#9	0.7M	87.0	93.8	96.6	96.9	84.5	89.1	89.2	94.4	83.4	76.4	73.0	72.5	71.6	

B-114

(MAXIMUM NOISE LEVEL _____ DBA)

TEST ITEM 60KW/400Hz GEN SET S/N FZ06050 HOUR METER #5173 CONFIGURATION ___ UNMODIFIED ✓ MODIFIED

TEMPERATURE 51°F HUMIDITY 50% TEST SITE HARTSELLE SURFACE GRASS TERRAIN ———

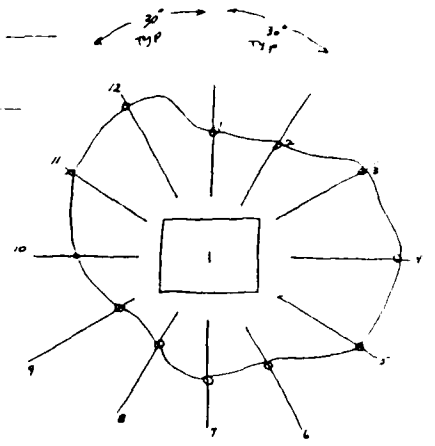
BAROMETRIC PRESSURE 29.696 SKY COVER OVERCAST WIND DIRECTION N/A WIND VELOCITY 0

MICROPHONE GR1962 SOUND LEVEL METER GR1982 OCTAVE ANALYZER ———

LOAD CONDITION ✓ RATED ___ NO LOAD MICROPHONE LOCATION AS BELOW

DATE	TIME	MICROPHONE POSITION	DISTANCE	DBA	REMARKS
3-3-86	0958	1	7-4	85	CENTER SECTION OF DISCHARGE BAFFLE REMOVED
		2	6-10	85	
		3	4-11	85	
		4	4-5	85	
		5	5-10	85	
		6	11-3	85	
		7	11-4	85	
		8	11-6	85	
		9	6-7	85	
		10	5-4	85	
		11	5-3	85	
3-3-86	1002	12	6-5	85	

8-15



FULL LOAD & NO LOAD

1.2m = 47.24" elevation
MEASURE DISTANCE AND DRAW CONTOURS @ 12 EQUAL 30° ARC DISTANCES MEASURED DISTANCE FROM SAT (OR CENTER OF SET) for SOUND LEVEL of 85 dBA

Gen Set 60 KW 400 Hz

S/N FZ0 6008

HIGH TEMPERATURE TEST (710.1c)

Regulator Range (511.1)	
Frequency Adj. Range (511.1)	
Circuit Interrupter (Short Circuit) (512.1)	
Circuit Interrupter (Overload Trip) (512.2)	
Circuit Interrupter (512.3) (Overvoltage/UNdervoltage)	
Indicating Instrument (515.2)	
Freq. and Voltage Regulation Stab. &Trans Response (608.1)	
Freq. and Voltage Stability (Long Term) (608.2)	
Voltage Dip & Rise (619.2)	
DC Control (655.1)	
Winding Resistance (401.1a)	

MODERATE COLD (701.2c)

Voltage/Frequency Regulation, Stability & Trans Resp. (608.1)	
Panel Instrument (515.2)	
Regulator Range (511.1)	
Starting & Operating (701.2)	

EXTREME COLD (701.1c)

Voltage /Frequency Regulation, Stability & Trans Resp. (608.1)	
Panel Instrument (515.2)	
Regulator Range (511.1)	
Starting & Operating (701.2)	

AMBIENT TEMPERATURE

Torsiographing Test (504.2)	
Winding Resistance (401.1a)	
Sound Level (661.2b)	*
Drop Test (740.3b)	
Max Power (640.1)	
Overtemperature Protective Device (515.2)	

* FAILED TEST

NOTE:

SOUND LEVEL WAS THE ONLY TEST PERFORMED ON THIS UNIT

(MAXIMUM NOISE LEVEL _____ DBA)

TEST ITEM 60 KW 400 Hz GEN SET S/N FZ06008 HOUR METER 21.8 CONFIGURATION ___ UNMODIFIED ✓ MODIFIED

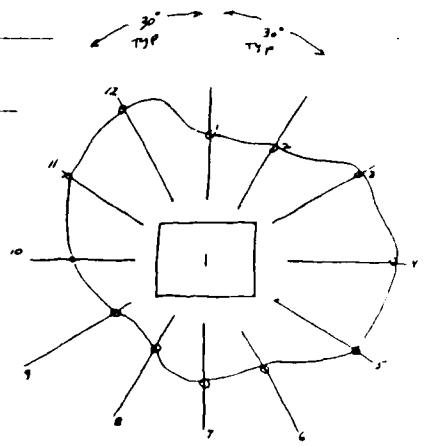
TEMPERATURE 61°F HUMIDITY 30% TEST SITE HARTWOOD SURFACE GRASS TERRAIN _____

BAROMETRIC PRESSURE 29.712 SKY COVER OVERCAST WIND DIRECTION N/A WIND VELOCITY 0

MICROPHONE GR 1962 SOUND LEVEL METER GR 1982 OCTAVE ANALYZER _____

LOAD CONDITION ___ RATED ✓ NO LOAD MICROPHONE LOCATION AS BELOW

DATE	TIME	MICROPHONE POSITION	FT/IN DISTANCE	DBA	REMARKS
3-3-88	1312	1	5'.9"	85	CENTER SECTION OF DISCHARGE BAFFLE REMOVED
		2	5'.6"	85	
		3	2'.8"	85	
		4	2'.10"	85	
		5	3'.7"	85	
		6	12'.0"	85	
		7	13'.6"	85	
		8	14'.5"	85	
		9	3'.8"	85	
		10	3'.0"	85	
		11	2'.8"	85	
3-3-88	1315	12	4'.3"	85	CJ, KM



FULL LOAD & NO LOAD

1.2m = 47.24" elevation
measure distance and draw contours @ 12 equal 30° arc distances measure distance from SAT (or center of SET) for sound level of 85 dBA

ACOUSTICAL TEST DATA

TIME: 1256 - 1309	DATE: 3-3-89		
TEST ITEM: 60Kw 400Hz Gen Set	STATION: Gated Load	TEST CONDUCTED BY: MTS	TEST ITEM OPERATOR: Kim B
RFG/MODEL NO: MEP 115A	SERIAL NO: FZ0 6009	ODOMETER:	HOUR METER: 21.5 - 21.7
TEST ITEM CONDITION: MODIFIED			
TEMPERATURE: 61 °F	HUMIDITY: 30%	TEST SITE: HARTWOOD	SURFACE: Grass / SEA STATE: / TERRAIN:
BAROMETRIC PRESSURE: 29.712"	SKY COVER: OVERCAST	STATIONARY OPERATION: [X]	HIGHWAY DRIVING: [ ]	DRIVE BY: [ ]
WIND DIRECTION: NA	WIND VELOCITY: 0	MICROPHONE: GR1962	SOUND LEVEL METER: GR1982	OCTAVE ANALYZER:
INTERIOR: [ ]	EXTERIOR: [X]	MICROPHONE LOCATION:	TAPE RECORDER:	TAPE NO:

	dbA	dbB	dbC	ALL PASS	31.5	63	125	250	500	1,000	2,000	4000	8000	REMARKS
#1 7m	79.6	86.2	92.7	99.5	91.7	84.6	80.7	82.2	77.8	71.1	68.7	63.2	56.7	Position #1 @
#2 7m	80.7	87.3	89.4	89.3	76.3	79.5	80.6	86.8	77.4	73.6	69.0	63.0	62.4	Exhaust End -
#3 7m	73.8	80.9	85.6	86.9	80.4	82.5	78.2	81.3	69.5	64.3	61.5	55.9	53.4	Move Clockwise
#4 7m	74.8	82.1	85.0	85.6	79.0	78.2	78.4	81.9	70.6	65.0	65.0	59.5	55.2	Position #9 @
#5 7m	75.4	82.2	84.8	85.8	77.8	74.1	80.4	82.9	69.5	64.9	61.4	58.4	57.1	Control Panel
#6 7m	75.9	83.0	86.3	87.1	80.6	77.8	80.8	83.1	71.4	66.3	65.0	60.4	58.2	Center Section of
#7 7m	75.9	83.6	88.0	89.3	85.0	82.9	79.5	83.8	69.3	66.1	64.0	57.6	53.7	Discharge Duct @
#8 7m	79.0	84.3	87.6	88.3	82.8	80.3	77.8	84.5	76.4	73.2	67.4	61.9	61.0	Removed
#9 0.7m	86.8	93.0	96.5	96.6	90.4	86.2	89.3	92.8	82.2	77.3	75.9	73.5	72.4	

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ACOUSTICAL TEST DATA

TIME: 1246-1256	DATE: 3-3-88				
TEST ITEM: 60KW 400HZ Gen Set	STATION: No Load	TEST CONDUCTED BY: NTS	TEST ITEM OPERATOR: KM BV		
RFG/MODEL NO: MEP 11SA	SERIAL NO: FZ06008	ODOMETER:	HOUR METER: 21.3-21.5	TEST ITEM CONDITION: MODIFIED	
TEMPERATURE: 61°F	HUMIDITY: 30%	TEST SITE: HARTWOOD	SURFACE: GRASS	SEA STATE:	TERRAIN:
BAROMETRIC PRESSURE: 29.712"	SKY COVER: OVERCAST	STATIONARY OPERATION: [X]	HIGHWAY DRIVING: [ ]	DRIVE BY: [ ]	
WIND DIRECTION: NA	WIND VELOCITY: 0	MICROPHONE: GR1962	SOUND LEVEL METER: GR1982	OCTAVE ANALYZER:	
INTERIOR: [ ]	EXTERIOR: [X]	MICROPHONE LOCATION:	TAPE RECORDER:	TAPE NO:	

		dbA	dbB	dbC	ALL PASS	31.5	63	125	250	500	1,000	2,000	4000	8000	REMARKS
#1	7m	80.0	85.5	88.5	89.1	79.1	75.6	79.2	87.6	79.3	70.2	68.0	61.9	58.3	Position #1 @ Exhaust
#2	7m	80.9	86.5	88.7	88.7	76.5	76.0	79.4	87.3	79.2	73.2	68.0	61.5	60.8	End - Moving
#3	7m	73.2	80.6	84.2	85.0	79.7	77.2	75.6	80.4	67.2	62.7	59.6	53.4	50.8	Clockwise - Position
#4	7m	74.5	81.5	84.0	84.7	75.9	72.8	76.2	61.8	68.8	63.1	61.3	56.1	52.0	#9 @ Control
#5	7m	73.3	79.5	82.9	83.7	75.0	72.6	72.5	80.6	69.3	62.5	58.2	54.0	52.7	Panel
#6	7m	73.6	80.6	84.2	84.4	79.5	74.4	78.4	79.7	70.3	64.0	62.0	57.4	54.5	Center Section of
#7	7m	75.1	82.4	86.4	84.0	84.8	79.9	78.0	83.2	67.9	64.5	60.7	55.8	52.8	Discharge Baffle
#8	7m	78.8	85.1	87.5	88.0	82.8	75.5	78.2	85.5	74.6	70.8	65.5	61.4	60.0	Removed
#9	0.7m	84.8	91.1	93.7	94.4	69.5	80.3	85.5	91.4	81.7	75.5	73.1	69.2	65.8	

(MAXIMUM NOISE LEVEL _____ DBA)

TEST ITEM 60KW 400Hz GEN SET S/N FZ06008 HOUR METER 21.7 CONFIGURATION ___ UNMODIFIED ✓ MODIFIED

TEMPERATURE 61°F HUMIDITY 30% TEST SITE HARTWOOD SURFACE GRASS TERRAIN _____

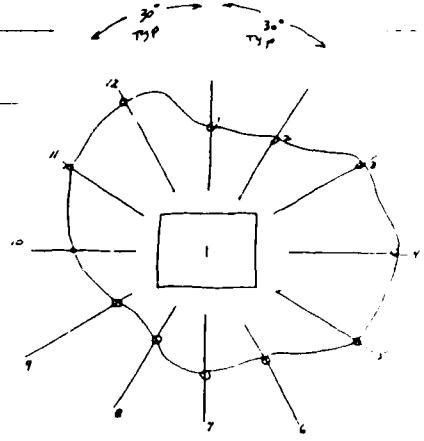
BAROMETRIC PRESSURE 29.712 SKY COVER OVERCAST WIND DIRECTION N/A WIND VELOCITY 0

MICROPHONE GR 1962 SOUND LEVEL METER GR 1982 OCTAVE ANALYZER _____

LOAD CONDITION ✓ RATED ___ NO LOAD MICROPHONE LOCATION AS BELOW

DATE	TIME	MICROPHONE POSITION	FT/IN DISTANCE	DBA	REMARKS
3-3-88	1310	1	8'.0"	85	CENTER SECTION OF DISCHARGE BAFFLE REMOVED
		2	6'.7"	85	
		3	4'2"	85	
		4	7'.0"	85	
		5	7'.5"	85	
		6	13'.4"	85	
		7	13'.9"	85	
		8	15'.5"	85	
		9	4'.1"	85	
		10	3'.8"	85	
		11	4'.3"	85	
3-3-88	1311	12	5'.5"	85	BJT/KM

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FULL LOAD & NO LOAD

1.2m = 47.24" elevation
MEASURE DISTANCE AND DRAW SOUNDS @ 12 EQUAL 30° ARC DISTANCES MEASURED DISTANCE FROM SET (OR CENTER OF SET) for SOUND LEVEL of 85 dBA

(MAXIMUM NOISE LEVEL _____ DBA)

TEST ITEM 60 KW 400 Hz GEN SET S/N FZ06008 HOUR METER 21.8 CONFIGURATION ___ UNMODIFIED ✓ MODIFIED

TEMPERATURE 61°F HUMIDITY 30% TEST SITE HARTWOOD SURFACE GRASS TERRAIN _____

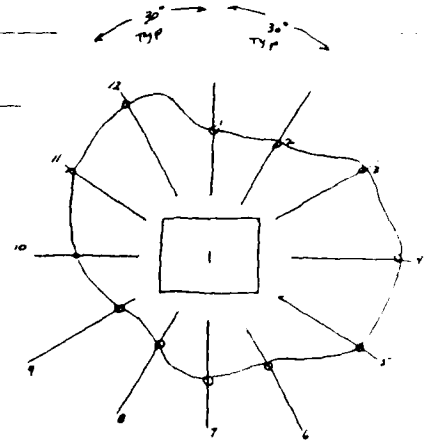
BAROMETRIC PRESSURE 29.712 SKY COVER OVERCAST WIND DIRECTION N/A WIND VELOCITY 0

MICROPHONE GR 1962 SOUND LEVEL METER GR 1982 OCTAVE ANALYZER _____

LOAD CONDITION ___ RATED ✓ NO LOAD MICROPHONE LOCATION AS BELOW

DATE	TIME	MICROPHONE POSITION	FT/IN DISTANCE	DBA	REMARKS
3-3-88	1312	1	5'5"	85	CENTER SECTION OF DISCHARGE BAFFLE REMOVED
		2	5'6"	85	
		3	2'8"	85	
		4	2'10"	85	
		5	3'7"	85	
		6	12'0"	85	
		7	13'6"	85	
		8	14'5"	85	
		9	3'8"	85	
		10	3'0"	85	
		11	2'8"	85	
3-3-88	1315	12	4'3"	85	CJ, KM

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FULL LOAD & NO LOAD

1.2m = 47.24" elevation
MEASURE DISTANCES AND DRAW CONTOURS @ 12 EQUAL 30° ARC DISTANCES MEASURE DISTANCE FROM SET (OR CENTER OF SET) FOR SOUND LEVEL OF 85 dBA